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THE SPHERE, FEBRUARY 13, 1943
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THE SPHERE

Vol. CLXXII No. 2247 WITH WHICH IS INCORPORATED THE GRAPHIC FEBRUARY 13 1943

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GUINNESS IS GOOD FOR YOU

Volume CLXXII No. 2247 The SPHERE, London, February 13, 1943

THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly

THE PRIME MINISTER RETURNS AFTER A MONTH'S ABSENCE, DURING WHICH PERIOD HE ATTENDED THE CONFERENCE AT CASABLANCA AND THEN TOURED THE MIDDLE EAST: Still in his uniform as an Air Commodore, he enters No. 10, Downing Street

Mr. Winston Churchill returned to London on Sunday last, February 7. He had been away from the capital for nearly four momentous weeks—probably the *most* momentous of the present war. During that period he attended the meetings with President Roosevelt at Casablanca, and then went on to Cairo, Turkey, Cyprus, back to Cairo and then on to the victorious Eighth Army at Tripoli. The Prime Minister travelled some 10,000 miles by air. After leaving Tripoli, his homeward route took him to Algiers, where he spent another thirty-six hours in conference with Allied leaders. On arrival at No. 10, Downing Street, he was smiling and fit, as if 10,000 miles by air and endless conferences had had no effect on the sixty-eight-years-old statesman! Within a short time after his return, Mr. Churchill presided at a conference at No. 10 with Ministers and Service chiefs to plan the coming offensives. (*Further pictures on pp. 196-7 of this issue*)

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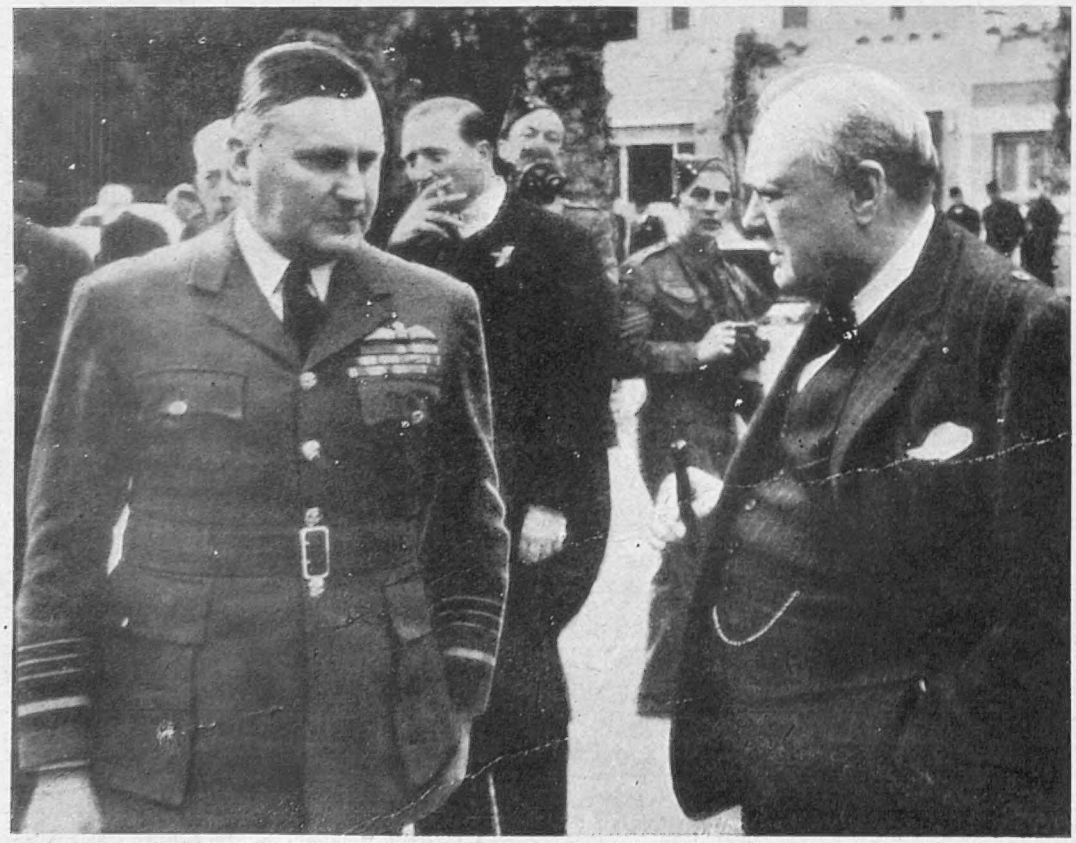
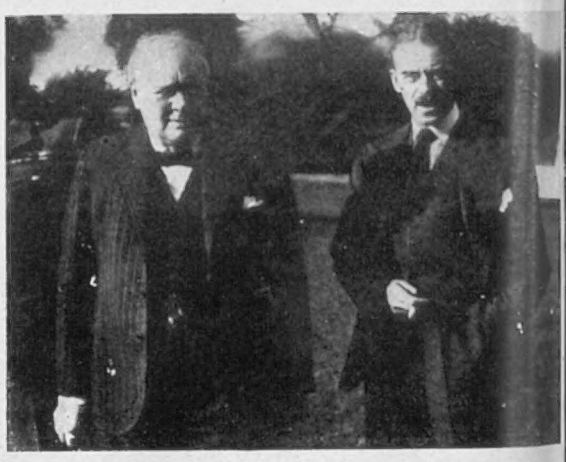
The PRIME MINISTER in the MIDDLE EAST—*Official Pictures Received by Radio*

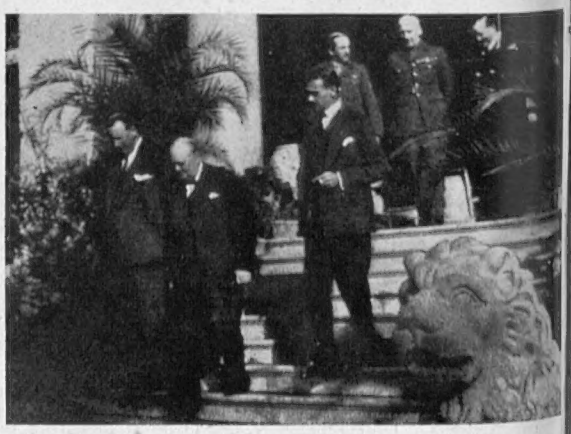
MR. WINSTON CHURCHILL IN CAIRO, after his historic visit to the Turkish President : A picture taken in the garden of the British Embassy, and sent by radio. From left to right here are Admiral Sir Henry Harwood (Commander-in-Chief, Mediterranean Fleet) ; General Sir Alan Brooke (Chief of the Imperial General Staff) ; Mr. Churchill ; General Sir Harold Alexander (Commander-in-Chief, Middle East) ; Field-Marshal Sir John Dill (Chief of the British Mission to Washington) ; Mr. R. G. Casey (Resident Minister in Cairo) ; Lord Lampson (British Ambassador to Egypt)



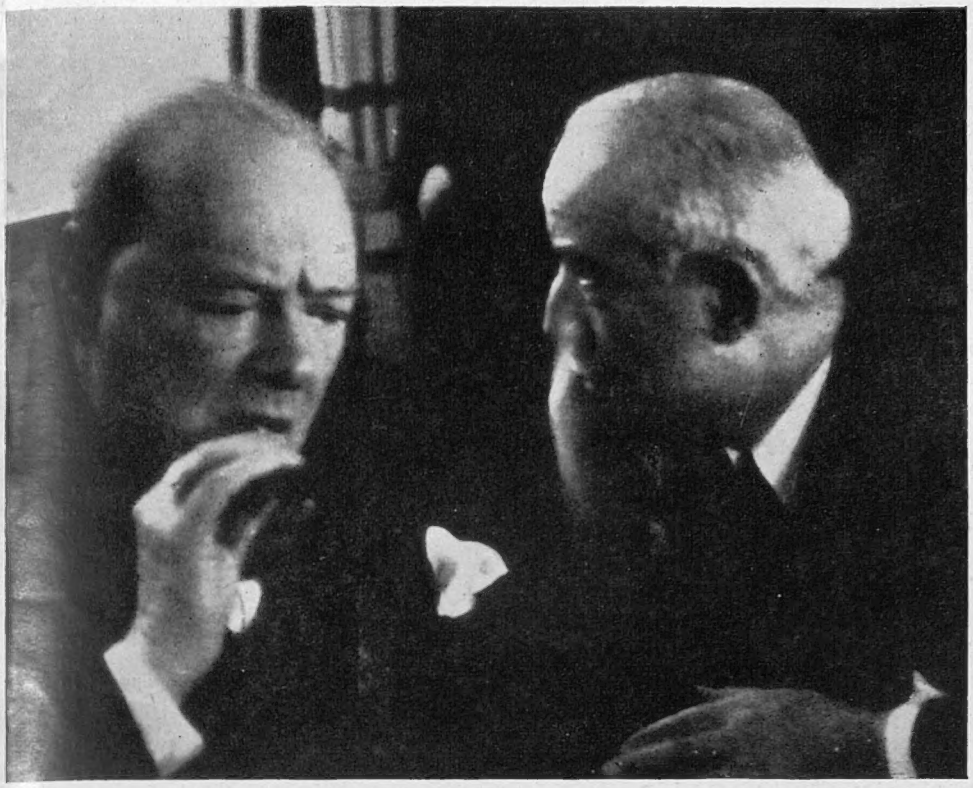
THE PREMIER IN CAIRO WITH THE R.A.F.'S NEW MIDDLE EAST C.-IN-C. Back from his visits to Adana and Cyprus, Mr. Churchill talks to Sir Sholto Douglas, who has just taken up his new duties in Cairo. In the background (centre) is Sir Miles Lampson, British Ambassador in Egypt, who was created a baron in the New Year Honours



MR. WINSTON CHURCHILL WITH MR. R. G. CASEY, British Minister of State in the Middle East, in the gardens of the British Embassy in Cairo



A GROUP IN CAIRO : Lord Lampson, Mr. Churchill, Mr. Casey, General Sir Alan Brooke, Field-Marshal Sir John Dill and Admiral Sir Henry Harwood



THE TURKISH PRESIDENT WITH THE PRIME MINISTER at the Adana meeting. When Mr. Churchill visited Turkey as the guest of the Government of the Republic, he was received in audience by M. Inonu at Adana. Several interviews took place between the Turkish and British statesmen and experts. Mr. Churchill was able to speak with the full knowledge of the views of President Roosevelt

THE CYPRUS VISIT: After the Adana conference, the second great surprise provided by the Prime Minister was his flight to Cyprus from Syria. This picture was taken as Mr. Churchill inspected his old regiment—the 4th Hussars—during his flying visit to the island

MR. CHURCHILL REVIEWS THE EIGHTH ARMY IN TRIPOLI: *On left*—Acknowledging the cheers of the soldiers and natives as he drives through the streets; *on right*—At the saluting-base; on the Premier's right is General Alexander, and behind the Premier are Lieut.-General Leese, General Brooke and General Montgomery. The visit to Tripoli was undertaken on the return from Cairo: Mr. Churchill spent Wednesday and Thursday—February 3 and 4—in the city. To General Montgomery and his men, the Prime Minister conveyed the nation's thanks for a victory which "had altered the whole character of the war"

THE RETURN TO LONDON, SUNDAY, FEBRUARY 7. The Prime Minister, in his R.A.F. uniform, with Mrs. Winston Churchill and with Mr. Brendan Bracken. The Prime Minister left for Casablanca on Tuesday, January 12: he has therefore been absent from London for just under four weeks, during which time he covered 10,000 miles by air

The SWINGS and ROUNDABOUTS of NAZI SPYING

How the German Espionage System has been Operated Throughout the World

By FERDINAND TUOHY

ESPIONAGE has been profoundly modified in this war by the introduction of international Fascism and of Communism as preponderant factors of the craft. A different world of secret agents, less bought and more primed, has supplanted the catch-'em-where-you-find-'em that informed a good deal of 1914-18 recruiting. Money still rules the roost, yet no longer in the overwhelming manner of old when "neutral businessmen," travelling personages and pretty ladies—to name but three types—were sought-for practitioners. For one thing, there is precious little travel now, compared with a generation ago. But the main cause of the change is ideological spying, highly organised.

What this will eventually prove to have yielded, on either side, should be most interesting. At present one has the impression that the Communist roots in every land are producing a better vintage than the Fascist tentacles. Some of the closest information affecting the Axis is made known to the world by the U.S.S.R., and it is fair to assume that as much again is not made known. But what strikes one chiefly about the Russians is the secrecy and sureness with which the Red Army operates, signifying that our Allies have not only built an adequate wall shutting out prying Axis eyes, but that they themselves remain in permanent contact with the other side of that wall. Of course the Germans have asked for it by leaving millions of active partisans in their rear, and throughout the occupied countries, but that is all in the business that I am endeavouring to examine. Soviet agencies in many latitudes must receive a rare budget of authentic information sent in not primarily for gain but for the cause. The neutral seaman who is a Communist, the railway worker in occupied territory, the unsuspected helper of the Nazis inside Germany, the Communist conscript in the Axis armed forces—one could cite type upon type without entering the realm of spy fiction. And if such individualistic, "frontierless" spying has its weaknesses, not least the ease with which the other side can eliminate Communists by hostage-shooting or the concentration camp, the regimented Nazi pattern has been showing fissures too.

This first became apparent in the autumn with the rounding-up of Nazi spies and fifth columnists in the United States. When of German nationality, these agents were largely the offspring of Ernst Bohle's Stuttgart bureau, "The League of Germans Abroad," which keeps a firm hand on all Germans in foreign countries. This organisation fed likely agents to Nazi Embassies, Legations and Consulates in North and South America. So that the task of tracking Nazi spies was correspondingly simplified by closest watch on these specific diplomatic headquarters and branches wherever situated

Thanks to a "canalised" form of watching, the United States was able to issue a remarkable memorandum on Axis spying in Argentina. Thirty hub Axis agents were operating in that country. Their activities affected ten South American Republics, and names were given, starting at the top with Captain Niebuhr, German Naval Attaché at Buenos Aires. These spies and saboteurs were divided into four groups, each group having its short-wave radio transmitters. The directing brains were in the Embassy but, physically speaking, headquarters were in the local German tourist office. Inestimably the greatest services of these spies have been in relation to the U-boat war. The report states that very many Allied ships have been sunk as the result of coded wireless transmissions to U-boats, and that "petroleum oil, munitions and foodstuffs worth several million pounds have been lost, together with hundreds of lives, men, women and children."

This Argentine hive is still allowed, although Niebuhr has been repatriated by way of a concession to the United Nations. But what I wish to point out is the over-centralisation and regimentation, with consequent proclaiming of the system.

It was the same in Chile. Even when still neutral, Chile did make an effort to quell the activities of German agents able to carry on within her borders. But Washington continued to send down hard facts to Santiago, where the German Air Attaché, von Bohlen, was the centre of a network with tentacles all over Central America and into the Caribbean. Thanks considerably to intercepted wireless messages, but also on account of the rigid, obvious human texture of Nazi espionage, it had once again been possible to expose the system—and eventually to greater advantage than in Argentina's case, since Chile, now free to act as she wills, has ordered the internment of all Axis nationals suspected of espionage.

Grave hurt will continue to be done from South America as long as self-sufficient agents contrive to remain in action there, and as long as the Argentine Government suffers Axis diplomats, to-day nothing more than master spies, to use Buenos Aires as their (one remaining) rallying-ground. A third danger emanates from the presence all over South America of diplomats of Franco-Spain, whose Chief still openly yearns for a German victory, whatever his private sentiments may now have veered to. Yet, on balance, enemy espionage in the Western Hemisphere is sensibly shrinking because diplomatic centres controlling it are for the most part closed. It is not easy to start things going again from distant Europe and Japan, once they have petered out on the spot.

I mentioned both Americas because there has come an improvement in Washington too. Both Laval's man, Henri-Haye, and the Finn, Procope, have been "distanced" from the capital which is such a merry-go-round of wartime information and expert talk, of blue prints and plans. Not that other excellently-placed diplomatic missions do not remain by the Potomac, to listen in and procure documentation for the Axis. As good a defence as care and silence is the laying of really well-thought-out "blinds," and the success of recent enterprises tends to show that governmental and military Washington are alive to the fact.

Has German espionage gained on the swings of Europe what it has lost on the roundabouts of America? A case can be argued that the Vichy-Fascist influence blatantly operating in North Africa has presented Germany with an exceptional opportunity to spy on a vast and growing Allied effort comprising all three Services. The Vichy Ambassador in Madrid, Piétri, is said to act as intermediary, passing on diplomatic bags to Laval which contain the latest reports from pro-Axis French officials in North Africa, and from Axis agents there; and so from Laval direct to Abetz.

What is certain is that Doriotists, ex-Hooded Men, and other extreme French Fascists are spread over the whole 1,200 miles from the Tunisian war zone right back to Casablanca, and that Americans and British have sitting on their tail, at Tangier, the full potentiality of an Axis spy nest.

"How, then," one has heard it asked, "didn't they know Churchill and Roosevelt were at Casablanca, or that, later, Churchill went on to Turkey?"

Well, there are such things as the brilliant spreading of false rumours and the practising of "blinds" on an extravagant scale. Berlin may have had convincing grounds for believing Mr. Churchill was in Washington, even as Axis agents in Morocco may have been spoofed away from the fact of the Anfa Conference.

More serious for them must have been the North African landings, a smack in the eye for the Nazi Intelligence system, of different calibre to the peregrinations of statesmen, however eminent. With Fascist eyes and ears on the alert in the Mediterranean, the difficulties of repeating such a coup are obvious.

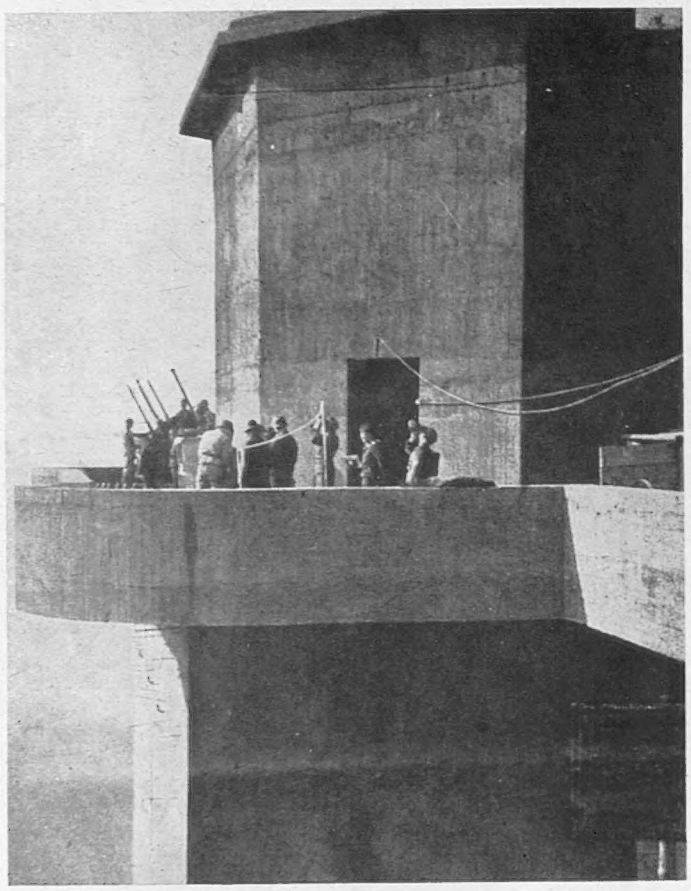
Spain and Turkey have been consistently used by the Germans as distribution centres, whence agents are directed to other fields. "Stuetzpunkt Spanien," under von Moltke, the new Ambassador, and General Faupel, a former one, has accrued importance since the turn of events in Latin America, and also by reason of the overriding priority henceforth given to U-boat warfare. In order to draw away from the too-observant capitals, Vigo is believed to be headquarters for the Iberian Peninsula and its espionage dependencies, and the Istanbul summer Embassy, for the Levant and Middle East, with an important branch at Alexandretta. The former spy chief, von Papen, is in his element as Ambassador to Turkey.

Ports like Vigo are intimately associated with Axis submarine warfare, the accurate direction of which must now be the first objective of German spying, not excepting where and when the Second Front will materialise. On land, a combination of Military Intelligence, the League of Germans Abroad, and the Gestapo is believed to direct the gaining of information.

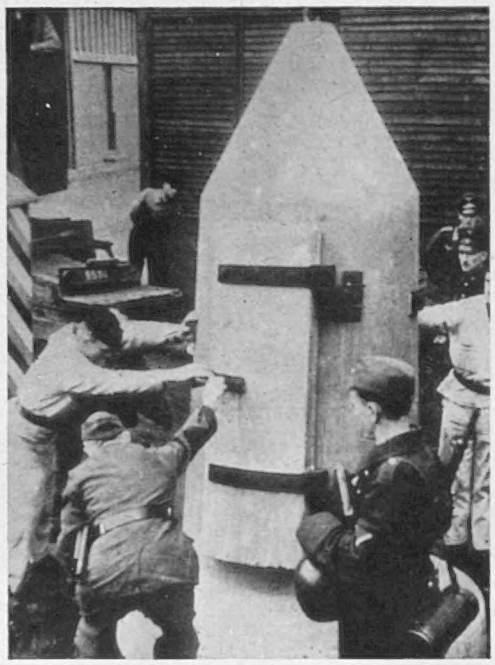
Nor is it wise to draw optimistic conclusions from the quick arrests of agents sent over here by parachute or water. They had been told to communicate by invisible ink, possibly through Eire, but such things are known as "fool spies" or agents deliberately put in the clutches of one's opponent in order to deflect him from the valuable spies, and to make him think what clumsy usages his enemy is reduced to. Dieppe showed every sign of having been communicated.

At this period the complete German spy seems to be a production of the following:

High standard of fitness, no weaknesses of character, politically above suspicion, required foreign language or languages spoken without accent. Trainees undergo four stages. First, instruction by old hands such as ex-leaders of Quisling groups, former diplomats, the Auslands Gestapo, and traitors like Haw-Haw. Second, a spell with Intelligence, learning microphotography, coding, radio transmission, how to use pigeons and invisible ink. Third, to a naval or air H.Q. for map-reading and drawing, parachuting and landing from a U-boat. The trainee must come down without damaging sensitive instruments, and be able to steer his dinghy by compass. Fourth, a term with the Pioneers, for instruction in sabotage and demolition.



THE FIRST PICTURE OF A GERMAN "FLAK TOWER": The Nazis' special anti-aircraft towers have hitherto remained a closely-guarded secret until this picture reached this country a few days ago. They are designed to bring a concentrated fire to bear on raiding planes flying at a high elevation. Berlin, in particular, is reported to have several for the defence of the capital: the crews of these were caught napping in the famous daylight raid on the tenth anniversary of Hitler's accession to power because, it is stated, they were all about to listen to Göring's broadcast speech (which was so dramatically held up by the R.A.F.)



GERMANY BUILDS ONE-MAN CONCRETE SHELTERS for her troops on the Channel coast: One effect of the constant daylight raids now being made by the R.A.F. and the American Army Air Force on the coasts of France is seen in this picture. The Germans have been forced to construct one-man shelters of concrete for their troops on guard in Occupied France, so great have been the casualties from low-flying Allied aircraft

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

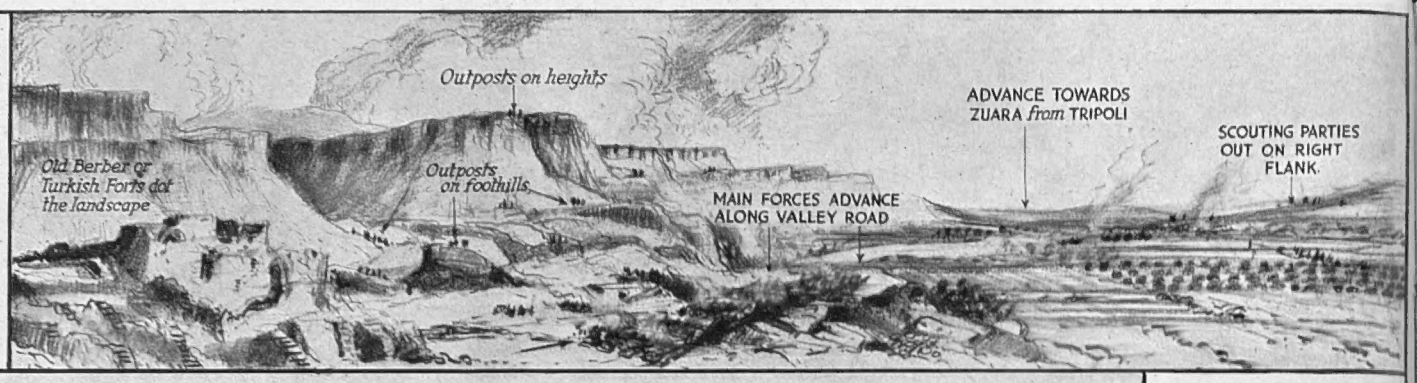
A VIVID IMPRESSION OF THE SCENE DURING THE HEAVY "CASCADE RAID" ON HAMBURG, as it appeared to the crew of a British Lancaster. Another Lancaster can be seen silhouetted against a background of fire and flak, which forms a weird pattern against the night sky—*An official Air Ministry photograph*

FLAK OVER HAMBURG

A Dramatic Picture Taken Over One of the Most Strongly-Defended Cities of Germany on the Night of January 30, 1943

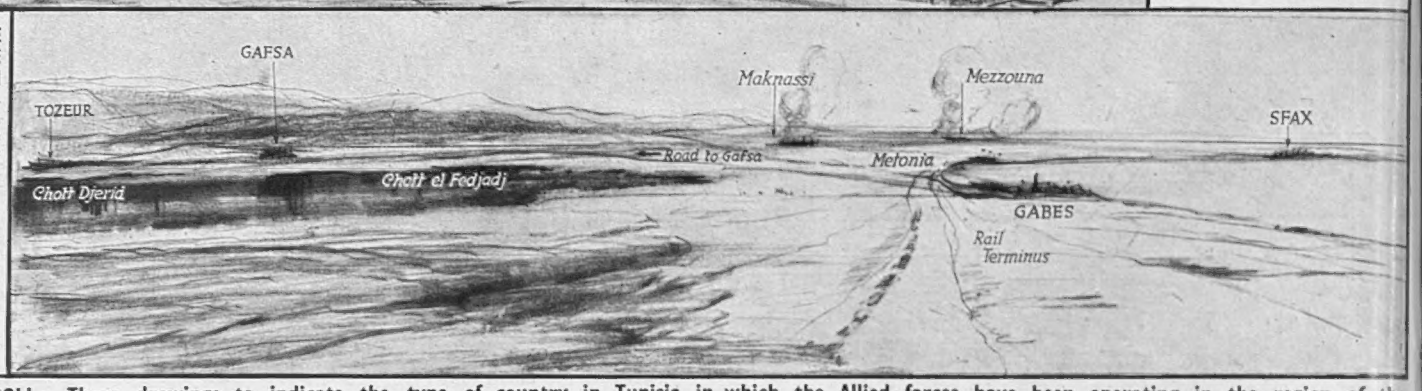
It is not often that the layman can acquire a knowledge of what our air crews over the Continent actually have to endure during the course of a raid: and, of course, no one picture could convey *all* that happens during the night's sortie. But the very vivid picture above does give an impression of what goes on when heavy British bombers are actually over their target and dropping their very heavy loads of destruction. It was taken on the night of January 30, when the R.A.F. visited Hamburg for the ninety-fourth time. They had to fight their way through gales, storms and icing; but as they neared the objective the sky cleared, and pilots could clearly see the big lakes which are such a pronounced feature of the centre of the city. Amongst the bombs were 8,000-pounders and many 4,000-pounders, and tens of thousands of incendiaries—all of which were dropped within half an hour, in pursuance of the new "cascade" tactics of the R.A.F. Hamburg is one of the most strongly-defended cities in the Reich, and the screen of flak put up by the ground defences can be very considerable indeed. That one Lancaster should have been able to take such a picture of another at close range is an indication of the precision with which the bombers arrived over the target area.

NEW MOUNTAIN TACTICS in the newly-invaded terrain beyond Tripoli. In desert warfare the operative word is "dispersal"; in mountain warfare it is "observation-posts." Hence, in the approaches towards Tunisia and the Mareth Line, the Eighth Army are sending out hill scouts as in the North-West Frontier campaigns in India, so as to guard the progress of the main body down the valleys. The securing of dominating hill positions gives an equal advantage, whether attacking or defending



FOUM TATAHOUINE, the Tunisian defence position at the head of the Mareth Line: This curious name has already been in the news recently in connection with Rommel's retreat to beyond the Mareth Line. Foum Tatahouine is a gaunt peak, at the foot of which is a military encampment: formerly the latter was the headquarters of one of the Bataillons d'Afrique, the French Colonial penal units. It is the first important point after the crossing of the Tripolitania-Tunisia border

ANOTHER "GAP" ON THE WAY NORTH FROM THE MARETH LINE—Gabes and the Salt Lakes. Soon after the Tunisian border has been crossed from Tripolitania, the general configuration of the country forces an army against the Mareth Line: it is difficult to outflank this to the west. But after the Line has been passed, another narrow stretch between Gabes, on the coast, and the big Chotts, or Salt Lakes, occurs. Further in the background in this region is the hilly country from which U.S. forces have been endeavouring to cut the enemy's lines

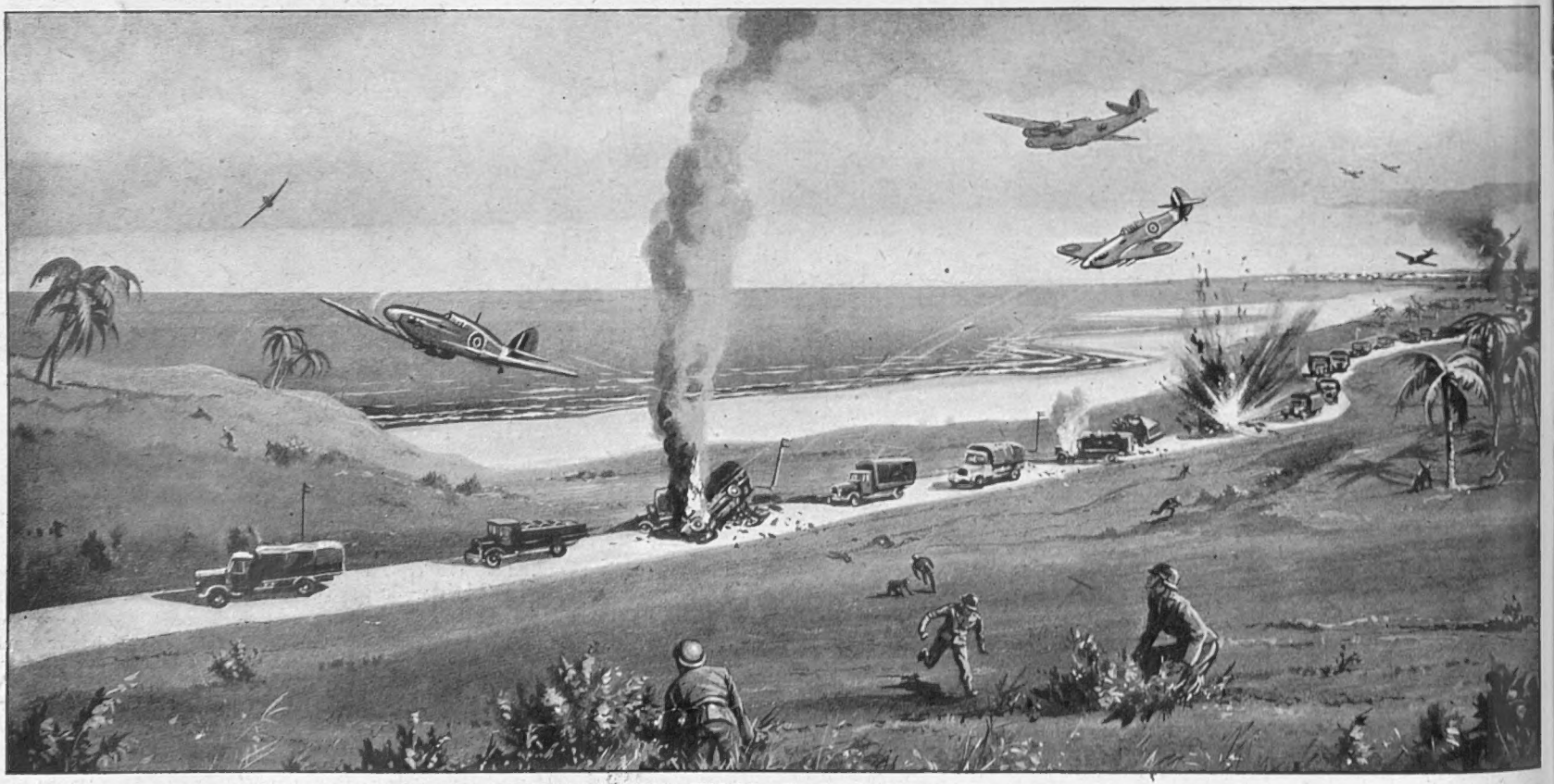


AFTER THE FALL OF TRIPOLI: Three drawings to indicate the type of country in Tunisia in which the Allied forces have been operating in the region of the Mareth Line and in the direction of Gabes—*Drawings by Percy. Home*

The CAMPAIGN in TRIPOLI

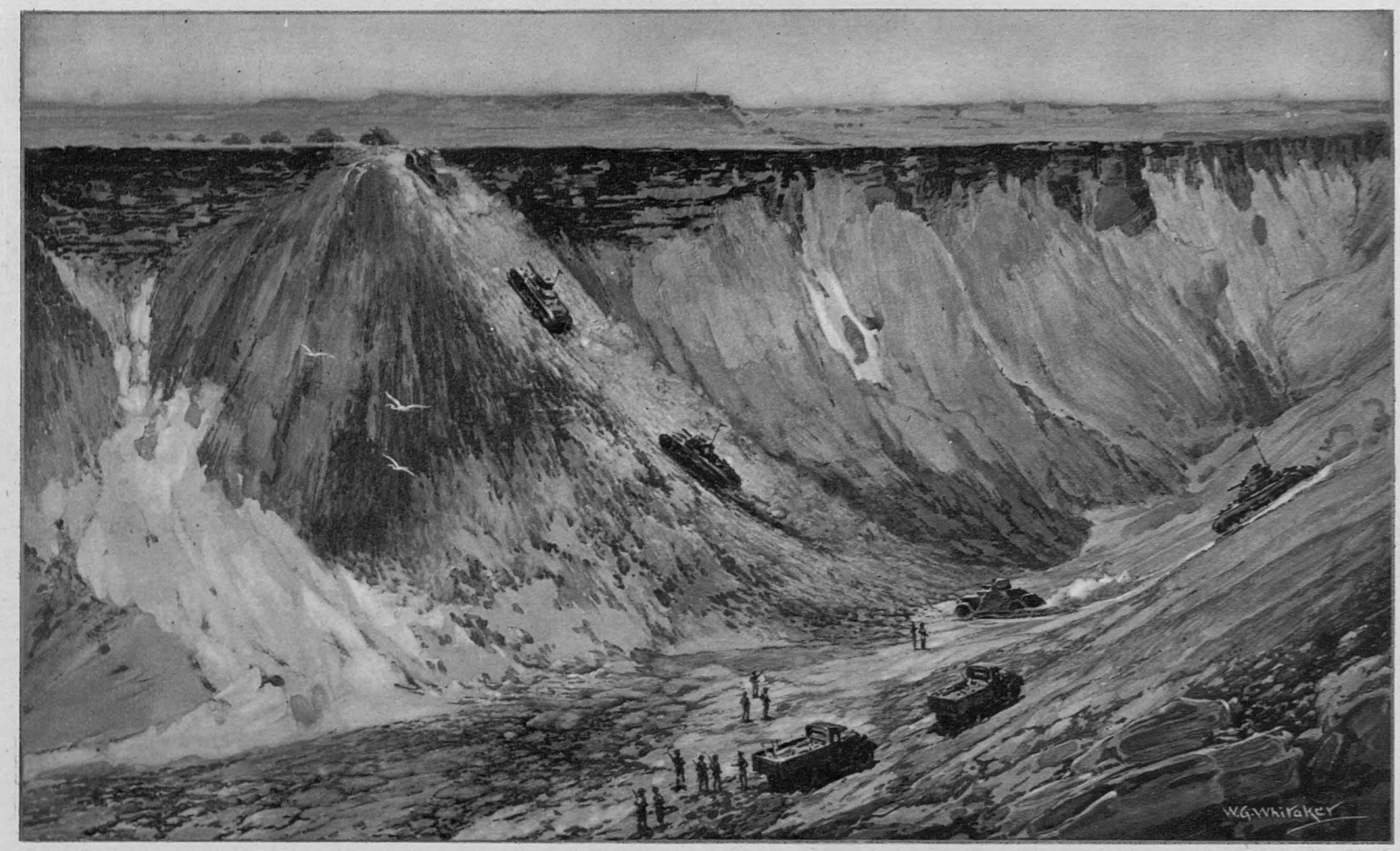
Phases of the Fighting Depicted in a Series of Special Drawings by "Sphere" Artists

Now that Tripoli has been left far behind, the struggle for mastery in North Africa is being concentrated in the vicinity of the famous Mareth Line. Rommel has sought shelter for his shattered remnants behind this rampart, and Arnim has been making strong efforts to succour him from the north. The nature of the fighting is now changing, from desert warfare to mountain warfare rather similar to that on the North-West Frontier of India. The Germans occupy the coastal strip of Tunisia: the Eighth Army is pressing up from the south, with the Mareth Line as its principal obstacle, whilst other forces—and, in particular, an American column—are pushing from west to east, via Maknassi, in the general direction of Gabes. The obvious aim of this latter push is to attempt to separate von Arnim's men from the north from those of Rommel coming up from the south. In order to give a general view of the new fighting terrains we reproduce the three drawings above. The topmost one shows the new "mountain warfare" tactics now being pursued by the Eighth Army; the two lower ones show the Foum Tatahouine and Gabes areas.



FIFTY MILES OF ROAD WRECKS DURING THE AXIS WITHDRAWAL FROM TRIPOLI: Hurricanes shooting up lorries, and Boston bombers attacking Axis road transport hurrying with Rommel's stores and equipment towards the Tunisian border—*Drawing by Roland Davies*

The great Axis flight from Tripoli received the full attention of the R.A.F. Sometimes columns a mile long on the stretch of road leading to Zuara were attacked from both the Tripolitanian and Tunisian sides by Allied fighters and bombers. In some cases lorries at each end of a column were bombed, and the road jammed so that the stranded transports in the middle became excellent targets for later attacks by our aircraft. German troops left their trucks and raced for whatever cover they could find by the roadside as our fighters dive-gunned them. Eventually the 50-mile stretch of road between Tripoli and Zuara was reported to be a "shambles" of wrecked Axis vehicles



HOW THE ALLIED TANKS OVERCAME THE WADIS WHICH ABOUND ON THE ROAD TO TRIPOLI : The scene at the Wadi Sofeggin, last of the three wadis protecting Misurata, where it was expected that Rommel would have made a stand, but didn't—*Drawing by W. G. Whitaker*

The sheer cliffs which border this wadi on its northern and western sides should have rendered it an ideal site for a "death or glory" stand. But the Axis decided not to defend it! Our armoured cars swarmed down one side of the wadi—it was almost steep enough to be called a canyon—and up the other with as little opposition as if it had been a peacetime manœuvre. These wadis, of which there are a great number crossing the coastal road from El Agheila to Misurata, are the dry beds of prehistoric rivers: they start their petrified courses far away in the now dry uplands to the south. In the upper part of their journey towards the coastline, they are broad and shallow; towards the sea they narrow and become like deep canyons. Up their sides, sand and detritus accumulate in slopes which allow of a way up, if the great gullies are crossed at right-angles

THE DESERT MAGICALLY TRANSFORMED INTO AIRFIELDS : R.A.F. ground staff collecting and burning scrub to make landing-places—*Drawing by Roland Davies*

Moving up almost in sight of the enemy, ground parties of our advanced fighter units in Tripolitania did magnificent work in preparing new landing-grounds. One magnificent example was the way Allied fighters were enabled to operate from landing-grounds in the Bir Dufan area, within 100 flying miles of Tripoli town. The aircraft and key personnel of a complete fighter formation was brought forward 140 miles in one hop. One of the landing-grounds, 1,200 yards square, was serviceable three hours after the advance ground parties had selected the site. At five o'clock on the afternoon of January 17, a squadron leader, who is in charge of advance landing-grounds, rushed forward to the front. The R.A.F. ground staff, with its supply and transport column and unit of the Royal Engineers, complete with graders, followed. Two and a half hours after arrival, three new landing-ground sites had been chosen and a signal despatched to Advanced Air Headquarters advising that one of them would be ready for use in three hours. After the baggage had been unloaded, a number of empty petrol-cans, to be used as airfield corner markings, were located. The next job was to collect and haul scrub, which was later set alight so as to direct incoming aircraft to the spot. Then the men pitched in with spades and aided in removing and flattening out nasty patches of camel scrub. At the same time everyone picked up any stones and rocks likely to cause an accident. Soon all was ready. Another empty, useless patch of sandy desert had been transformed, as if by magic, into a first-class landing-ground. The beacon was lit. Another speed record had been made by the R.A.F.

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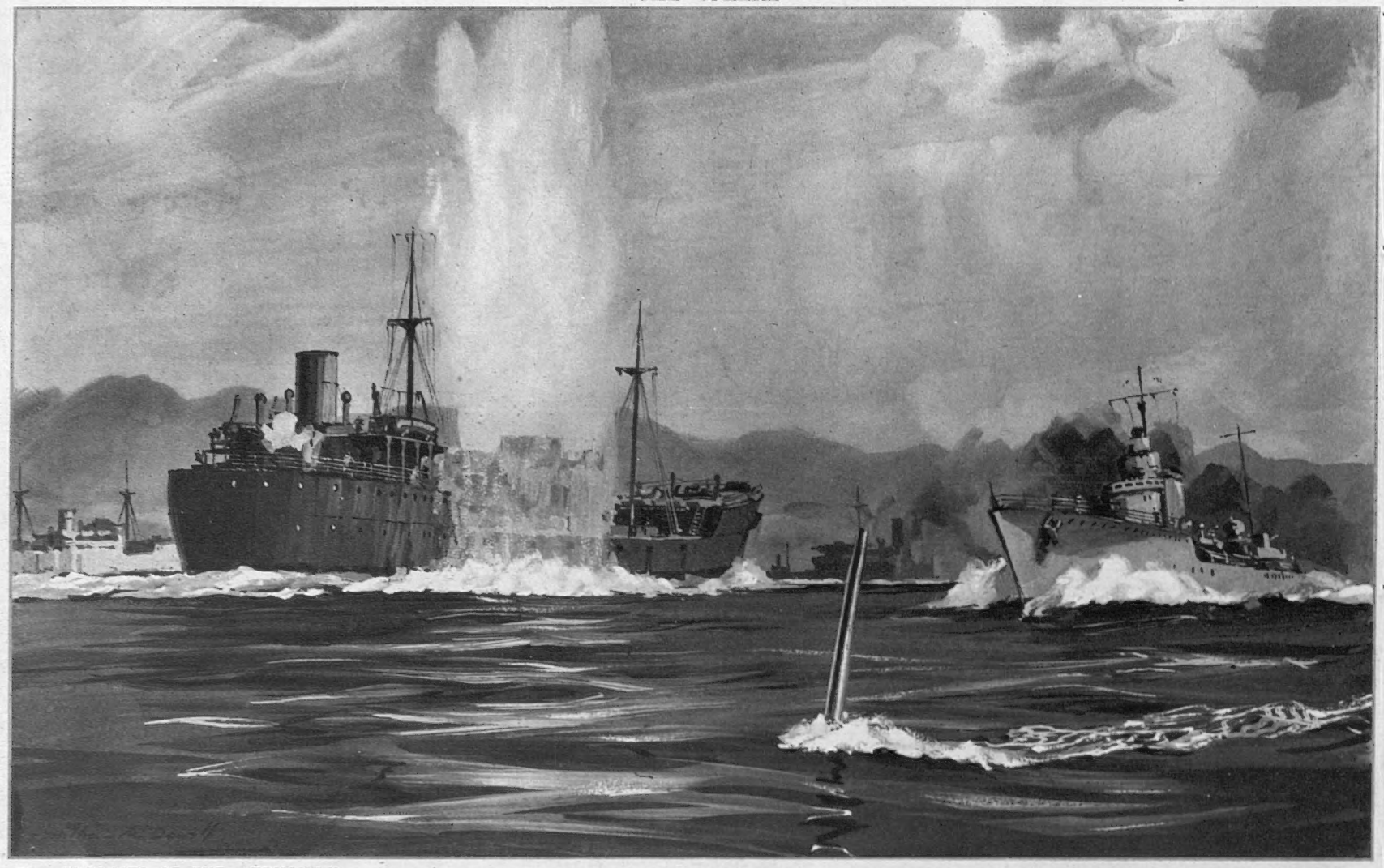
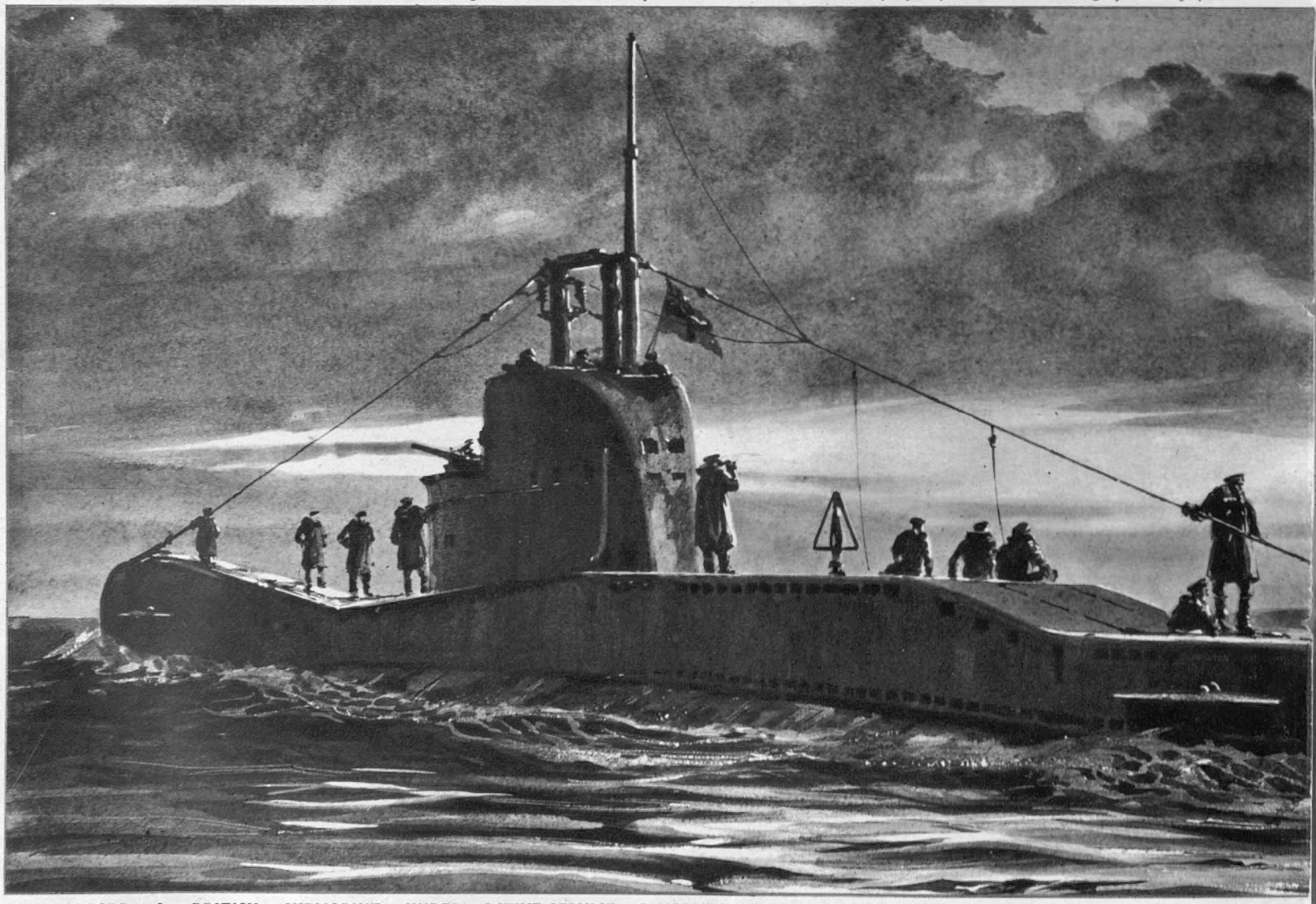


1. EXPLOITS OF THE "TRUANT." **THE SUBMARINE ATTACKS A TANKER CONVOY CLOSE TO THE ITALIAN COAST.** This drawing shows the "ghost" of the torpedo hit. Lieut.-Commander Haggard describes the scene as follows: "I saw a terrific column of water beside the tanker as high as the mast. That fell and left behind it in the air what we call the 'ghost'—that's the shape of the column outlined in spray" (*see* narrative on right)—*Drawing by Wm. McDowell*



LIFE ABOARD A BRITISH SUBMARINE UNDER ACTIVE-SERVICE CONDITIONS: Taking advantage of calm weather, the commander has brought much-needed fresh air and whatever exercise the small deck space permits. A keen look-out is naturally kept on all hands as the submarine cruises slowly: aircraft come into view above, the vessel would submerge instantly—*Drawing by Wm. McDowell*

Space aboard a submarine is, necessarily, very restricted. The most modern types in the British Navy are of a length of about 260 ft., with a beam of about 26 ft.: but most of this space is occupied with engines, batteries, torpedo-tubes, torpedoes, supplies, fuel, etc.; yet the normal complement for a modern submarine is over fifty officers and men. At night, the vessel *must* come to the surface to recharge the batteries which have been used for underwater cruising during the daytime: and it is then that the crew are able to take restricted exercise and gain badly-needed fresh air. When cruising in enemy waters, it is usually unsafe to surface during the daylight hours, unless the circumstances are particularly propitious (such as the moment depicted in

his vessel to the surface at dusk, to allow the crew to get some should an enemy vessel show up on the horizon, or a hostile

Mr. McDowell's drawing above). The commander and crew would be on the qui vive the whole time, taking careful note of any untoward occurrence, whereupon the submarine would dive at once—"crash dive" if the most urgent action were demanded!

2. EXPLOITS OF THE "TRUANT": IN THE HARBOUR OF BURAT EL SUN, IN THE GULF OF SIRTE. "I got as close as I dared and fired two torpedoes. They didn't hit her but ran underneath, because she had been unloaded, and went off against the piers with a shower of sparks"—*Drawing by Wm. McDowell*

A BRITISH SUBMARINE IN ACTION

As Described by a Commander Whose Vessel has a Long Record of Achievements in Many Waters

Lieut.-Commander H. A. V. Haggard, D.S.O., D.S.C. (son of an Admiral and a nephew of the novelist Rider Haggard), is the commander of the submarine *Truant*: his vessel has been in action on the Norwegian coast, in the Mediterranean, the Indian Ocean and the Java Seas. She has just returned to Britain after an absence from home of two and a half years, during which she sank or damaged more than twenty Axis ships and steamed more than 80,000 miles.

The Commander recently gave a broadcast account of some of his exploits, and the following is a description of two which took place in the Mediterranean: I remember, he said, a most unusual incident on patrol, when the *Truant* was silent, with all machinery stopped and we were lying on the bottom with three parts of the crew drinking tea in the control-room.

What happened was this: one glorious bright Mediterranean day we were going down the Italian coast submerged, and I saw through the periscope a small tanker convoy escorted by a destroyer. As usual, they were very close to the shore in shallow water to prevent submarines getting near enough to attack them. Our problem was this: was it *possible* to get close enough to make sure of an attack? I decided it was.

At the start all went well; the convoy passed and torpedoes were fired, but the water was shallowing rapidly. One or two torpedoes probably went into the bottom, but some probably ran straight, and, most important of all, there was a loud explosion and the submarine shuddered. I saw a terrific column of water beside the tanker as high as the mast. That fell and left behind it in the air what we call the "ghost"—that's the shape of the column outlined in spray.

The problem now was how to get away. The destroyer turned to ram, and we heard the noise of her propellers as she passed overhead. There was only ten feet of water above us, and she drew eight. We tried to turn away from the coast, and in doing so we hit the bottom.

The submarine bounced to the surface, but we got her down again, after we'd been seen, and stuck hard and fast in the mud. We had already gone to gun-action stations to engage the destroyer with gunfire as a last resort. Now we were stuck fast and there was nothing to do but wait and hope that a chance would come to get away. That is how we came to be congregated in the control-room drinking tea. There was nothing else to do.

British submarines usually have to work close inshore in enemy waters. I have an almost peacetime pleasure-cruise knowledge of many beauty spots on the Italian and Dalmatian coast—Capri, Brioni, the Ægean Islands. Once we entered an enemy harbour on the surface: this was the harbour of Burat el Sun, in the Gulf of Sirte, which the Germans were using at that time. They were using it then to supply Rommel's army.

It was too shallow for us to enter submerged, so at dusk one evening we surfaced and steamed in. We knew that a petrol ship was in there, and as soon as we got past the rather tricky sandbanks and rocks we saw her. It was then dark, an unusually black night, and chosen as such. But I could see a black shape silhouetted against the desert coast.

I got as close as I dared and fired two torpedoes. They didn't hit her but ran underneath, because she had been unloaded, and went off against the piers with a shower of sparks. We scraped rather ignominiously along the ship's side to avoid collision, and were cursed by a deck-hand. He sounded very angry, but we shouted "Il Duce!" to him, and he calmed down, and we turned round and were thankful to get out again.

From what I've said about pleasure cruises and drinking tea, you may imagine that the submarine has things all her own way. Don't you believe it. I haven't said anything about those very unpleasant things—aircraft, minefields, depth-charges and other obstacles—because I haven't time. But they're there all right—plenty of them—and they make life in a submarine very interesting.

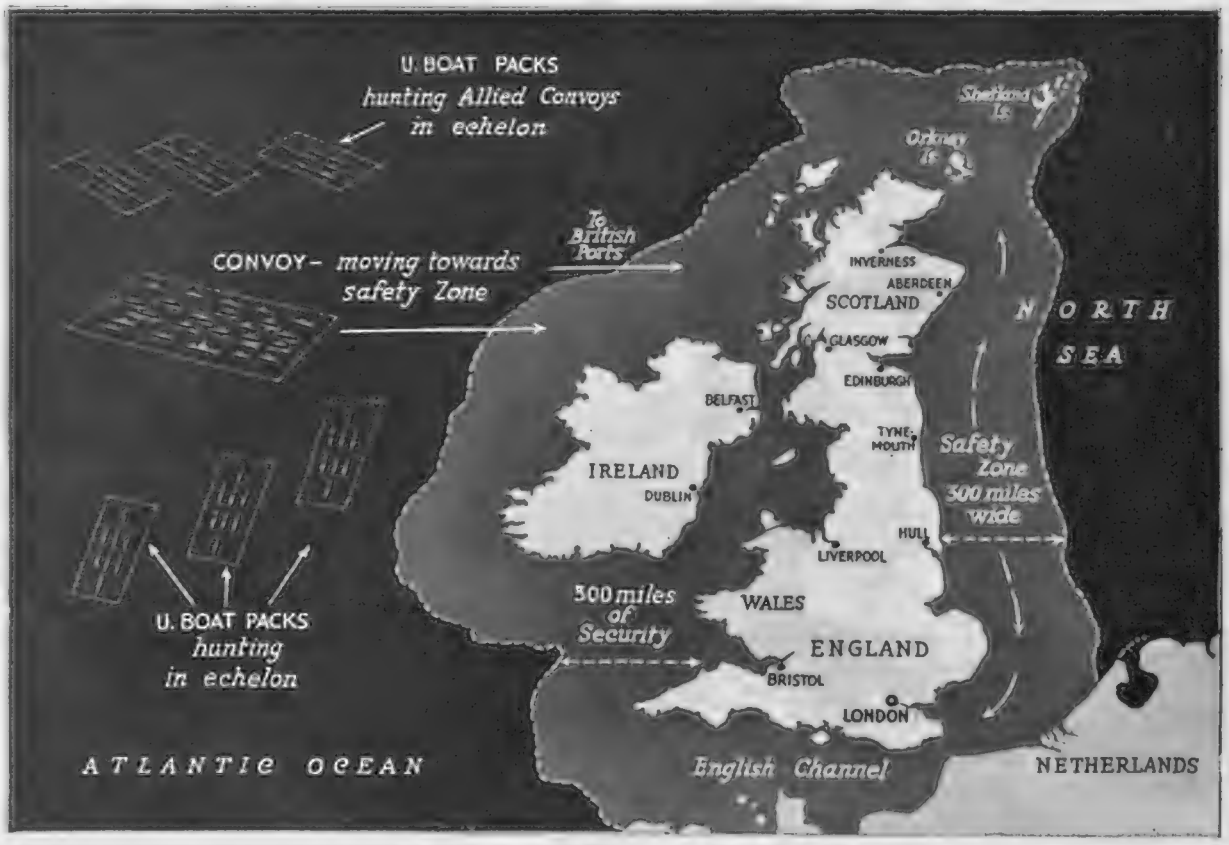
SAFETY FOR THE CONVOYS FOR 300 MILES AROUND THE SHORES OF BRITAIN: German U-boats dare not show themselves on the surface within 300 miles of our shores. Convoys which are often attacked for four days when far out in the Atlantic seem to enjoy an uneventful time during the last thirty-six hours of their voyage. This state of affairs is due chiefly to the fine work of the aircraft of Coastal Command—*Drawing by Roland Davies*

TWO PHASES of the U-BOAT WAR

Submarines Working in "Echelon"; and a 300-mile "Safety Zone"

Two recent utterances by prominent statesmen have, once again, drawn attention to the U-boat war around Britain.

The first of these was by Sir Archibald Sinclair, the Air Minister, who has pointed out the great part played by Coastal Command in frustrating the efforts of the submarines attempting to sever our vital lines of supply. The long-range aircraft which guard the convoys are harrying the U-boats so hard, he declared, that to-day no enemy submarine dared to show itself on the surface within 300 miles of our shores. The result of this unceasing vigil has been the creation of a virtual "safety zone" around the British Isles; within this zone, so vigilant are Coastal Command patrols that a U-boat would face instant attack from above were it to pursue its quarry too far inshore.



THE NEW TACTICS OF THE U-BOAT "PACKS": Hunting the convoys "in echelon" outside the 300-mile "safety zone," into which they dare not enter for fear of detection and subsequent attack by the ever-present and ever-watchful aircraft of Coastal Command

BRITAIN'S NEW SUBMARINE ADMIRAL: Rear-Admiral Claude Barry, D.S.O., who has served almost continuously with this branch of the Navy since 1914. In 1939 he became Naval Assistant to the Second Sea Lord; in 1940 he went to the Mediterranean in command of H.M.S. *Queen Elizabeth*, and then for a short period commanded H.M.S. *Valiant*. From July to October 1942 he was Commodore (Administration) Eastern Mediterranean Fleet. He succeeded Admiral Sir Max Horton as Admiral (Submarines) in November 1942, with the rank of Acting Rear-Admiral. He was promoted Rear-Admiral in January 1943

On left—**ADMIRAL DOENITZ, the U-boat Admiral, who has just replaced Admiral Raeder as Commander-in-Chief of the German Navy. He is rabidly fanatical about his submarine war against Britain**

The second utterance was by Mr. A. V. Alexander, First Lord of the Admiralty. He made the frank statement that "the enemy is now using new U-boats in larger packs and with new tactics. The U-boats are now even more concentrated than before. They are now lying, not in single packs, *but in echelon of packs.*" And the recent appointment of Admiral Doenitz, the U-boat specialist, as C.-in-C. of the German Navy would seem to indicate that an even greater intensification of the submarine campaign against Britain is soon to be expected.

Mr. Alexander indicated that the U-boat menace is a growing one. "The enemy is very concerned to break our sea communications," he said. "There has been no period of our naval history when small ships have been more needed or when the tasks which they were given to perform were more varied or more testing. . . . There have been great casualties in ships and men. It is something of a miracle that we have been able to replace them by the most modern of ships."

THE LAST DAYS OF GERMAN RESISTANCE AT STALINGRAD—Artillerymen of a Battery of Guards in action : their guns are shelling the Nazis entrenched in the ruined buildings a short distance away. One such battery destroyed eight German tanks in the course of the fight for the city.—*Drawing by W. G. Whitaker*

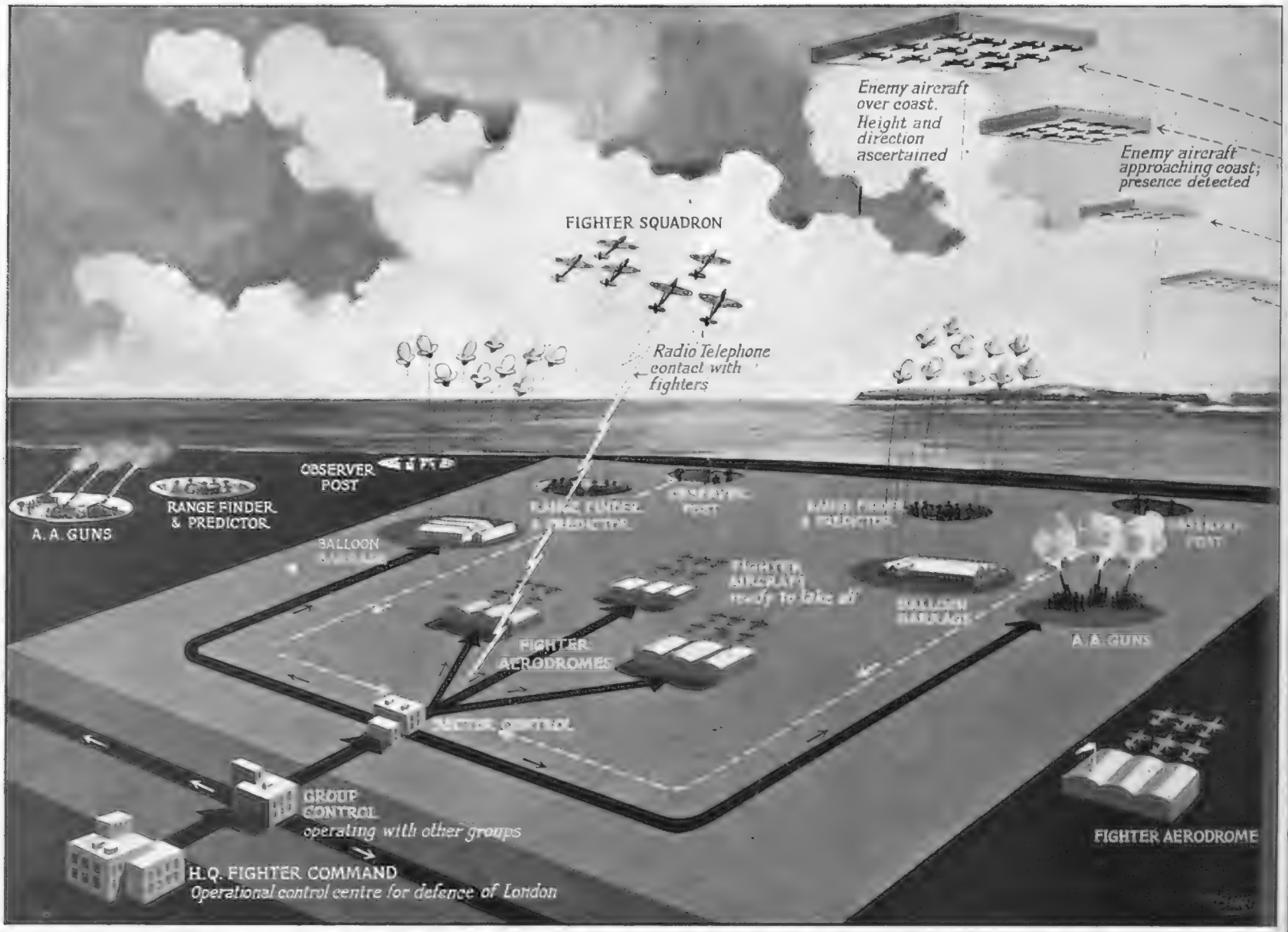
DRIVING ON TOWARDS ROSTOV : A picture sent by radio from the forward Soviet battle area. These Soviet tanks, going in to the attack, were taking part in the three-pronged drive towards Rostov and the Ukraine, which is now being carried out by the Red Army

THE RUSSIANS ADVANCE NEAR VORONEZH, which hitherto has been a comparatively quiet sector. The Russian tank is waiting in ambush between farm buildings and a hay-stack, during an advance in this region, where the Germans are again receiving a drubbing

With the surrender of General Paulus and his subsidiary commanders, the fight for Stalingrad is over—with the Russians everywhere triumphant. But before the final surrender, the advanced line was strung out across the open spaces around the city, through the residential quarters of workers' settlements, factory yards and shops. At some points the German and Soviet trenches almost touched ; with barbed-wire entanglements surrounding various buildings and street blocks. Towards the end, many of the city's concrete walls and ceilings had caved in under direct bomb-hits ; steelwork hangs limply everywhere ; and metal and stone have been minced by the incessant bombardments from both sides. The Russian artillery—always good—performed prodigies of valour throughout the bitter fighting, and largely contributed to the collapse of German hopes

ON THE RUSSIAN FRONT

JUST A FEW of the many thousands of Germans captured in the Red Army's winter offensive on the Central Front



THIS IS HOW ENEMY AIRCRAFT OVER BRITAIN ARE FOUGHT OFF BY THE R.A.F. The methods of detection—observer posts and range-finder stations—are indicated; and the methods by which the fighter aircraft receive their orders from H.Q., through Group down to Sector, are also shown. (*See* article below)—*Drawing by H. P. Burton*

The AIR DEFENCE of LONDON

How It Has Been Organised and Co-ordinated

With Other News Items Connected with the War in the Air

FOR the purpose of air defence, Britain is divided into a number of districts or air zones, each under the executive control of a subsidiary unit of Fighter Command. These units are called Groups, and through them Fighter Command Headquarters passes its orders to the smaller subdivisions of its organisation when a raid is impending. To one of these Groups in the southern area is entrusted the supremely vital task of London's air defence, but as each Group covers a very wide area it is further split up into Sectors. The interposition of Sector Control between Group Control and the Wings is peculiar to Fighter Command, and is made to provide additional flexibility in operations which necessarily entail rapidity of decision and action and the bringing into play of a great diversity of forces. Command Headquarters must be visualised as the central pivot of a system of communications radiating out through Group and Sector to a network of fighter aerodromes, observation posts, A.-A. batteries and other auxiliary services. All these auxiliaries are in direct telephonic communication with Fighter Command, Group and Sector Controls. When enemy aeroplanes set out on a raid, radiolocation picks them up shortly before they cross our coast and reports to Command and to Group Headquarters. It tells the direction in which the formation is flying and its approximate size. At once orders go out from Command to Group, from Group to Section Control; thence they fan out to the Wings and the Squadrons, and fighters from the selected aerodromes take the air to intercept before the London area is even threatened. The battle may be fought out near the coast or at the estuary of the Thames and the raiders driven off or destroyed without a siren sounding in any part of London. The air defence of London begins many miles away, perhaps out to sea: begins and, more often, ends here with the defeat of the raiders.

Co-ordination of all the different means of defence under the direct control of Fighter Command is secured in the case of the barrage balloons, radiolocation and observation by bringing these essential auxiliaries under the operational control of Fighter Command Headquarters within the particular geographical Group, and the orders for the balloons to go up, or for the sirens to give the Alert, in any area emanate from Fighter Command. But the anti-aircraft batteries, searchlights and predictors remain under Army control. Liaison officers are attached from these to Command and to Group Control and in practice efficient co-operation is thus secured.

SUBALTERN JOAN COTTER WITH PRIVATE OLIVE MAYER operates a kine-theodolite: This instrument plays an important part in our anti-aircraft defence plans

THE GIRLS BEHIND THE GUNS—All set at their lonely quarters on a cliff-top: Recent raids on Britain have brought into the limelight the magnificent work done by the A.T.S. attached to A.-A. batteries. The kine-theodolite operators did not take over the work from men: they alone were the pioneers, and have developed the use of that intricate instrument—a combination of camera, telescope and theodolite—designed to photograph moving targets and shell bursts in the sky. The A.T.S. girls also calculate the results by trigonometry and logarithms. By pressing a button, pictures are taken a mile away. On the left, Subaltern Cotter (a Dublin University student and the only member of the A.T.S. who is allowed to wear a red band on her cap) is working with Private Mayer (of Pettswood, Kent—formerly a Town Council official)

AMERICA'S HUGE NEW TRANSPORT PLANE MAKES ITS MAIDEN FLIGHT: The triple-tailed Lockheed Constellation, about to take off from Burbank, California, on its first flight. It has been under development for about two years, and is reported to be the fastest cargo land-plane in the world

When a warning is received the Group has to decide, on the available information in its possession, what is the likely target of the enemy. The enemy is probably fanning out as they approach the coast, trying to confuse the defenders. It is comparatively easy for a few to detach themselves from the main formation and sneak in across the coast unawares, especially at night or in conditions of low cloud and poor visibility, whilst the bulk are deflected or driven away by fighters sent out to attack them.

No sooner is the enemy "seen," as the plotters in the control-rooms of the Groups and Sectors call it, than their probable course and speed are plotted and the warnings sent. It takes time for the fighters to climb to the altitude necessary to engage the enemy; and they are useless if they are below that height when the hostile planes are over or approaching the target area. They are kept continually informed by observation and by the plotters of the position, direction and approximate number of the enemy, but in spite of the complete network of observers, no system, however perfect its organisation, can accurately forecast the objective of fast machines which may change their direction at will at any moment. Fighter Command must often guess, and the wonder is that their guesses are so accurate and that in ninety-nine cases out of a hundred the sirens sound and the balloons go up just where the attack does come. There will again be rare, isolated instances when bombs fall before the Alert is given or before the balloons go up, especially when the raiders are not seeking military objectives, but are content with terror tactics and the bombing of civilians.

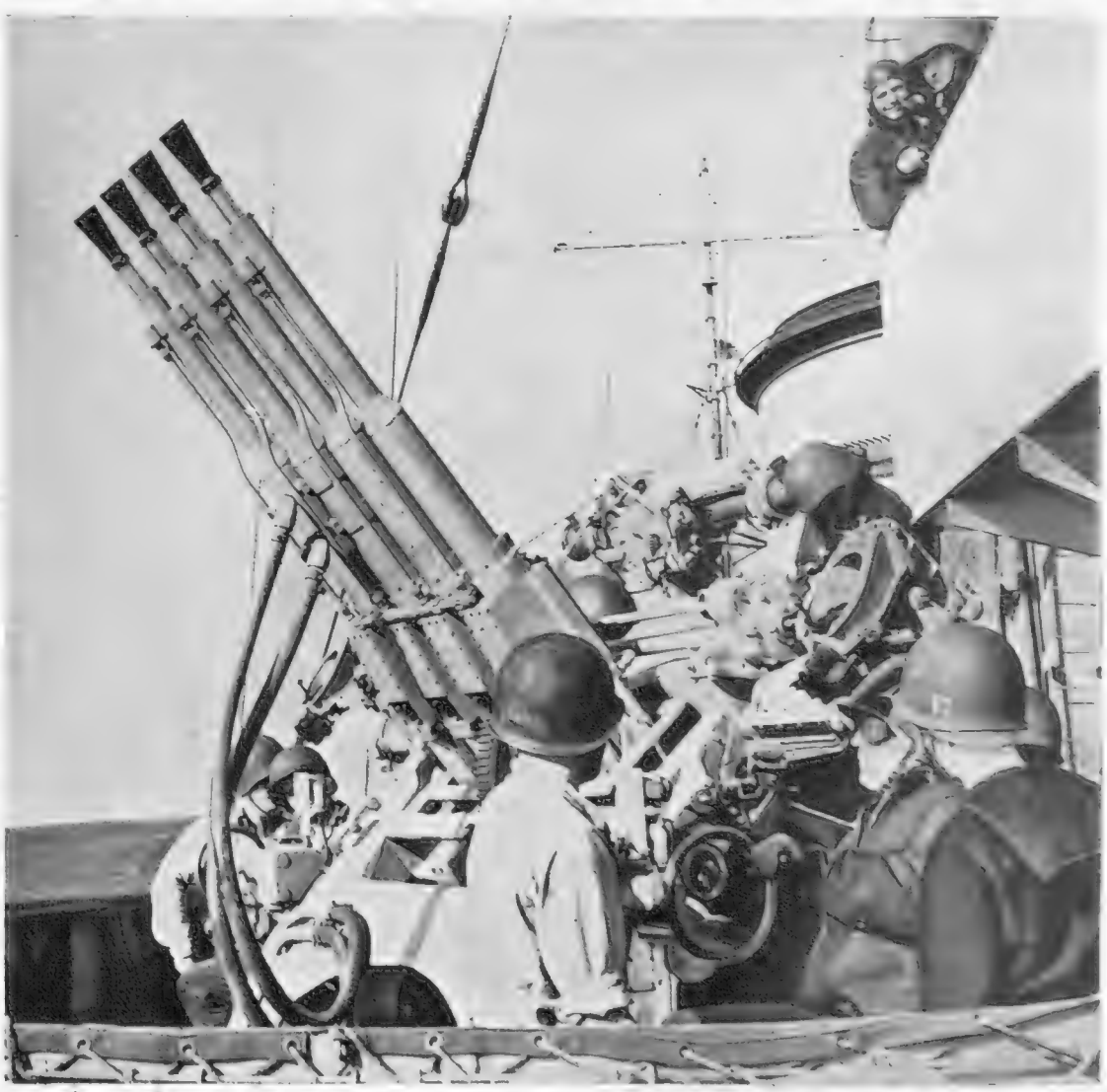
Proof of the success of the defence of London is provided by the two recent raids. During that week twenty-nine enemy planes were brought down—a figure out of all proportion to the small number of machines sent over. Furthermore, out of sixty or seventy bombers which set out to bomb London on the night of January 17, only about half-a-dozen reached the capital, the rest being driven off by fighters. In fact, we have enjoyed immunity for so long that it needed them to show how our night fighters have improved to their high pitch of effectiveness and how intense the A.-A. gunfire has become. Every fighter pilot now is trained in night fighting, and the combination of ground defences with night flyers has been proved so effective that the enemy finds the disproportionate loss of his machines too serious to permit attempts at mass raids.

A.-A. Command, with its predictors and searchlights, in the early days provided the principal means of defence, and since then its power and accuracy have been trebled. The searchlights, moving across the night sky, often lead the fighters to their quarry besides locating the raiders. In the latest raids, Home Guards helped to man the guns and earned high praise for their work.

Another important auxiliary, the Balloon Command, differs from the A.-A. Command in that it comes under the operational control of Fighter Command. Its task is to compel hostile planes to keep a given height, so that they cannot indulge in hedge-hopping or dive-bombing, or bomb with a high degree of precision. Balloons, too, tend to increase the efficiency of the A.-A. fire by decreasing the angle velocity of the guns. On many of the sites in London a large percentage of the crews is made up of members of the W.A.A.F., well trained to their tasks, and the tendency is for more and more women to handle the balloons.

There have been changes recently in Fighter Command. Air Chief-Marshal Sir William Sholto-Douglas, who was in command from November 1940, has gone to the Middle East, and the Air Officer Commanding-in-Chief is now Air Marshal Leigh Mallory.

ANOTHER VIEW OF THE CONSTELLATION. It is equipped with four 2,000-h.p. engines, which give it a top speed of more than 300 m.p.h. and a ceiling of 35,000 ft. Its pay-load is nearly 10 tons. Cruising at a speed of 250 m.p.h., the Constellation is expected to have a range of over 3,000 miles. It is stated to be "faster than a Japanese Zero fighter or any known four-engined bomber now on active service"



AN ANTI-AIRCRAFT BATTERY ON A MODERN AMERICAN CRUISER. This vessel participated in the recent landings on the North African coast: the weapon shown in the picture consists of a battery of four 1·1-in. guns, coupled up in the same manner as our own multiple pom-poms—a very effective deterrent against low-flying aircraft and dive-bombers

"EDINBURGH ROCK," IN TRIPOLITANIA: A RUINED TURKISH CASTLE ON A HILL BEHIND HOMS, USED AS A NAZI OBSERVATION POST, IS STORMED BY HI the crack Storm Troops of the enemy's 90th Light Division and routed them, thus securing a pass which was the key to t

ONE OF THE MANY CURIOUS LITTLE BUILDINGS FOUND IN THE DESERT WASTES: This is a small native tomb located in the shallow depression known as the Wadi el Kebir, on the coast road to the recently-captured city of Tripoli

The SEAFORTHS in ACTION at HOMS

The Engagement in the Hills Beyond Homs

The ruined castle depicted in Mr. Edward Osmond's drawing above is a relic of the Turkish occupation of Tripolitania. It stands on a hill behind the town of Homs, to the east of the capital city of Tripoli; during the advance of the Eighth Army it was used as a Nazi observation post. To the men of the Seaforths it was known as "Edinburgh Rock," because of its obvious similarity to that well-known Scottish landmark.

To subdue this position was a difficult undertaking—"as tough as any the Eighth Army had ever had to face." A special force was picked for the job—tanks, sappers, artillery, machine-gunners—and the Seaforths. There was nothing superfluous in this "Blitz column"; every man in it was a fighting man.

In the light of a full moon they sped into the hills, while our guns sent shells ahead of the hand-picked battle group. The column was deep in the hills when the Germans fell on it. The sappers got the full weight of the first attack—they were clearing mines when crack Nazi troops of the 90th Light Division charged from either side.

In a second, the sappers threw down their shovels, seized rifles and tommy-guns and went into action. Sappers and Storm Troops fought a duel: but the sappers were not long without support. Highlanders, their bayonets fixed, swept past them and into the Germans. Mad minutes of fierce, hand-to-hand fighting

HLANDERS OF THE EIGHTH ARMY. With bayonets fixed, the Seaforths charged e city of Tripoli—*Drawing by Edward Osmond*

followed. Then it was over—and the Germans were dead or gone, and the column was again on its way. Now, from hidden places in the hills, German machine-gunners opened fire. At dawn, with the Germans still holding the last two hills on either side of the road, and sitting behind Spandaus in machine-gun nests, they spat bullets at every movement by our men. They held the pass which was the key to Tripoli, and we had to wrest it from them quickly.

It was another job for the infantry—for the Highlanders!

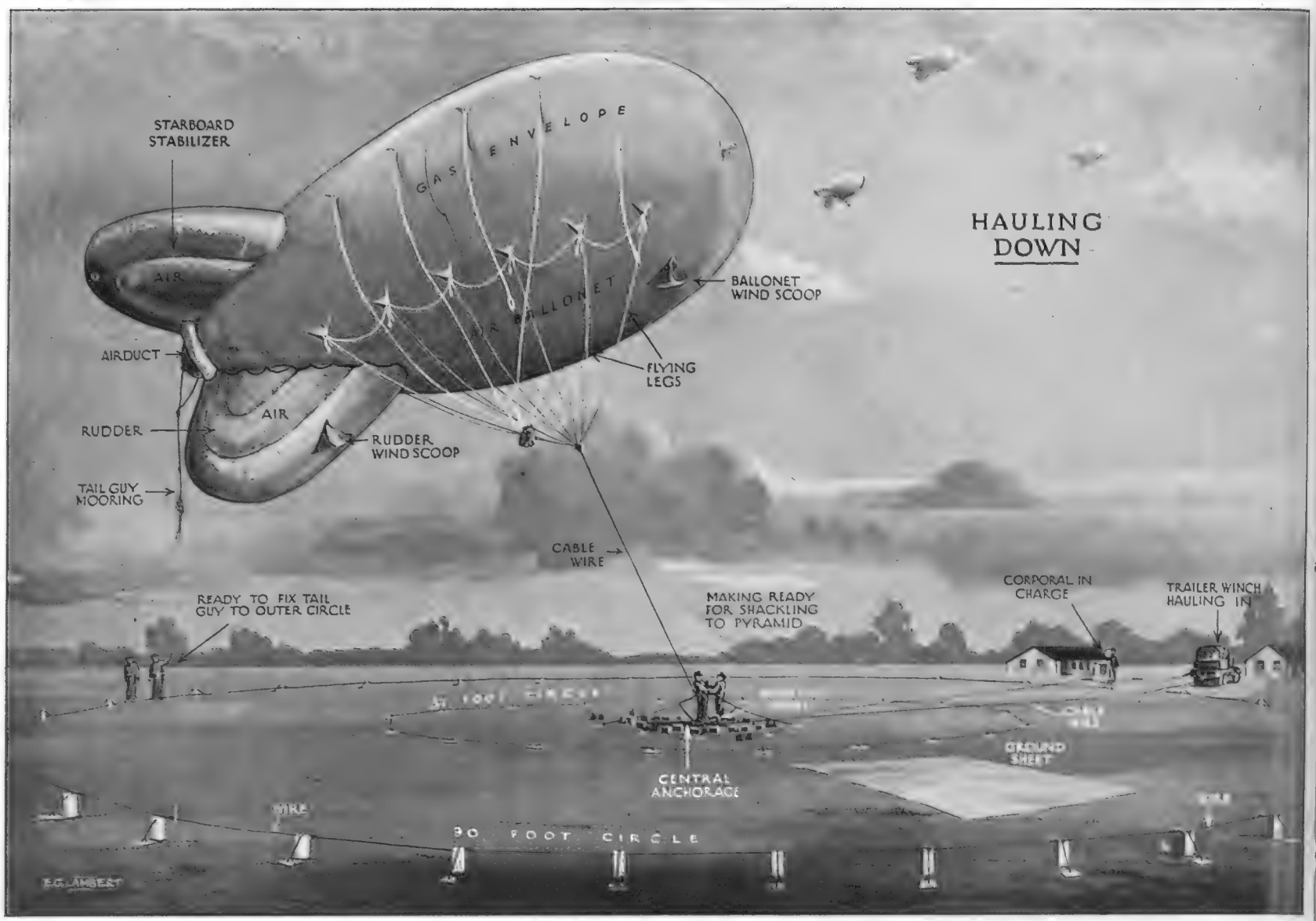
Bagpipes (last heard by the Nazi 90th Light Division at El Agheila) echoed in the valleys in the clear morning air. Actually, there were not many of the *crack* 90th left; but those in the mountain rearguard were the very best of them.

Our frontal attack started. Gradually, under a hail of fire, our men wormed their way across the lowland and up the hill-sides, "mopping up" Nazi strong-points as they went. But there were more Germans than we thought. They began closing round the attacking Highlanders.

At the top, with the enemy almost encircling them, sniped at from every direction, the Seaforths re-formed, charged forward and kept charging until they broke a way through. Pierced and shaken, the Germans began to retreat.

Rommel's best had found more than a match in a comparative handful of Scots!

On right—**THE MAN BEHIND THE 51ST HIGHLAND DIVISION—Major-General Douglas Wimberley, D.S.O., M.C. (second from left),** who has led the Scots from victory to victory in the desert. He served with the Division in the last war; in August 1940 he went back to it, being given command (after a short absence with another Division) in June 1941. It has been said of him that "when he had a company, it was the best in the battalion; when he had a battalion, it was the best in the brigade; and when he had a brigade, he made it the best brigade in the Division." The story of the 51st Highland Division might lead to a further parallel!



I. HOW THE ORDINARY BALLOON IS HANDLED BY THE GROUND CREW: Hauling down, in order to shackle it to the "pyramid." This drawing shows the principal features of the big balloon—its envelope, rudder and wind-scoop, stabiliser fins, etc.; it also depicts the outer 90-ft. circle and the inner 37-ft. circle; the "pyramid" of heavy wire to which it is secured; and the trailer winch by which it is wound in. (See article below)—*Drawing by E. G. Lambert*

ABOUT OUR BARRAGE BALLOONS

A Subject once more in the Public Mind as a result of German Daylight Raids

FOR more than three years barrage balloons have floated over our towns and cities, protecting them from dive-bombers and machine-guns. Why is it, then, that the average citizen knows next to nothing about these capricious monsters which have done so much to ensure his safety?

Ask him about their size, their lifting power, the height at which they fly, how they are controlled, why enemy fighters don't shoot them down, why they are shaped as they are, like sausages, or why the tail often flaps about, half-deflated—and five times out of six you will not get the right answer.

The balloon has a cubic capacity of 70,000 ft. Freed of its guy-ropes and shackles, it has a surplus buoyancy of about one ton. In other words, if little more than an extra ton were added to the lift of the balloon, it might take the lorry up with it into the air. Wind force in the zone of air in which the balloon is to ride is often much greater than on the ground, and miniature whirlwinds or sudden rushes of air created by high buildings or the contours of the land near the balloon station might easily bring disaster to the balloon and cause serious injury to the ground staff. To manipulate a shape so huge and at the mercy of every puff of wind when operating it from a confined space is therefore a feat that calls for training and a high degree of skill. And when there is a boisterous wind blowing, increasing enormously the strain on the cable, the job indeed is really one for an artist.

In recent months, at quite a number of stations, girls of the W.A.A.F. have taken over from the men and are performing all these difficult, and often heavy, tasks with great success and efficiency. They undergo a period of training by qualified instructors, and when they leave the special training station they are expert at shackling and unshackling the mooring guys, furling the tail and bedding the balloon down, handling the cylinders of gas, driving the lorries, operating the winch that controls the cable and, in short, actually flying the balloon. They are trained to patch the inevitable tears in the fabric and to do all necessary adjustments and repairs themselves.

The balloon site is a sunken oval. In the centre is a pyramid of heavy wire with a revolving wheel over which the cable passes from the winch by which the balloon is hauled in for bedding-down. When moored, rudder and tails are carefully folded in and the guy-ropes made fast to movable ground anchors. There are two sets of guys, one row running round the upper section of the balloon and being secured to the outer ring of the oval; the other shorter guys being hooked on to a number of movable concrete blocks each weighing over 100 lb. Even in calm weather the safety of the fabric demands as many as thirty or more of these anchors.

For obvious reasons, certain facts about the balloons cannot be disclosed—the height at which they usually fly, for instance, or the reasons for their comparative immunity from attacks by enemy fighters. At one time it was common enough for German fighter pilots to sail in and shoot them down before the bombers came, and that these tactics have been discontinued is due, no doubt, to devices which have earned the careful respect of the enemy.

Naturally, the "given height" at which they fly is variable, but it is greater than a casual estimate would lead one to suppose. Of course, both the A.-A. men and the pilots—but not the enemy—know the height.

Balloons have long been in use for reconnaissance and for carrying messages in wartime, both in free flight and as captives. All the earlier varieties, however, were spherical in shape and consequently twirled round and round when anchored by a cable to the ground. Moreover, they were almost unmanageable in a moderate breeze.

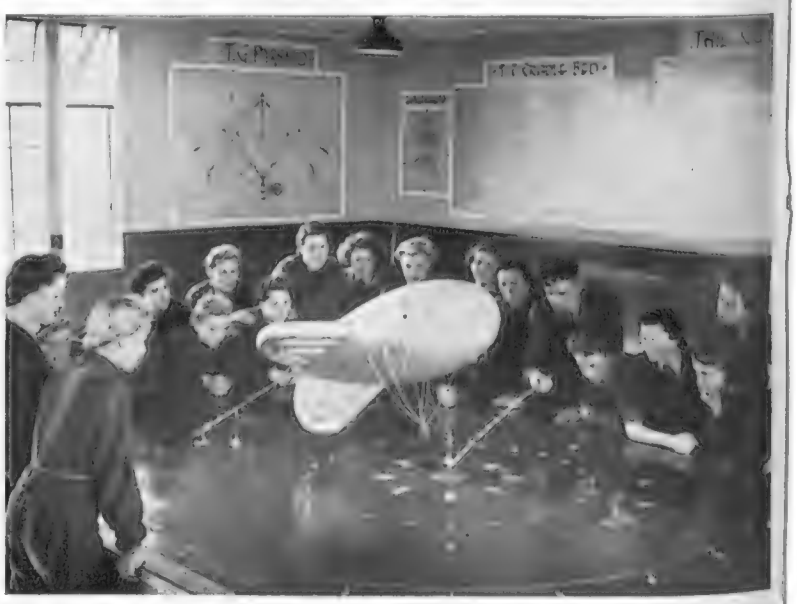
It was necessary to find means to stabilise the captive balloon and enable it to be flown even in half a gale—hence the advent of the modern sausage balloon. This came into general use early in the last war, tails being attached to the long gas-bag to keep it nose-on to the wind and thus minimise the wind pressure on its huge surface. In the raids on London twenty-five years ago British kite balloons of this type were employed, flying at altitudes up to 10,000 ft. These were the real forerunners of our present-day barrage balloons.

The three tail-pieces are not inflated with gas, for stability could not be gained in that way. There is an air tube running along the bag through which the wind rushes, blowing out the tails and so keeping the balloon steadily facing the wind. It is for this reason that when the balloon nears the ground, where the wind is less steady, the tails droop and sag Moored, they must be furled to prevent them being caught by gusts which might cause injury to the balloon.

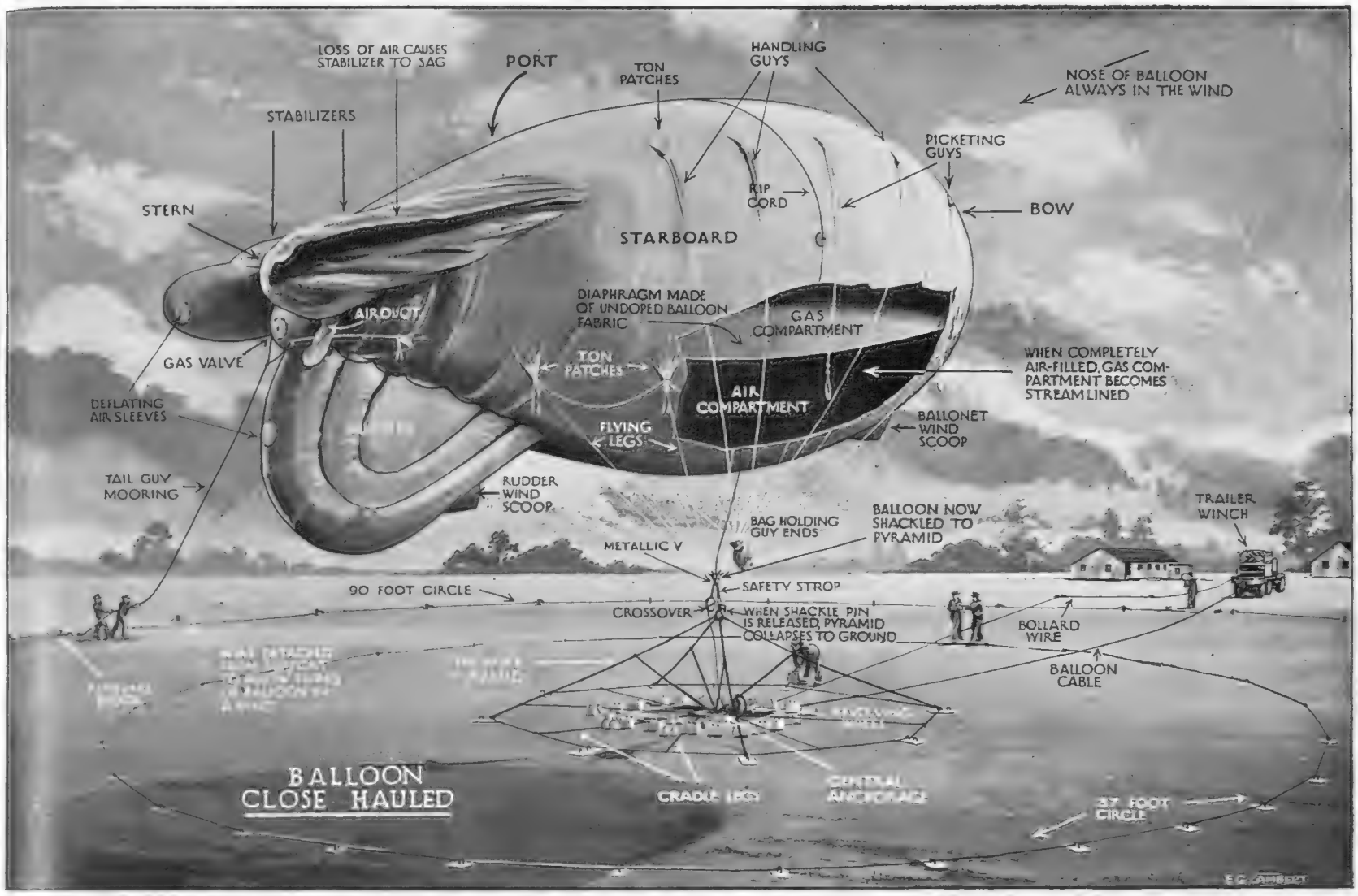
There are two other questions I have often been asked—viz., what gas is used for inflation and why the winch operator sits in a kind of cage. The gas is hydrogen—not the safer, non-inflammable helium, the latter being both impracticable at present and too costly. The cage enclosing the winch not only protects the operator from the risk of a snapped cable; static electricity accumulates, giving rise to danger of injury from electrocution. The charge passes to earth *via* the protecting steel of the cage, which is an adaptation of an old invention of the famous Faraday.

There are other barrage balloons besides those we see every day on our way to work—the smaller ones which guard our shipping lanes and the approaches to the ports. Moored to barges stationed in the river mouths, or towed along the Channel by small vessels whose job it is to protect our convoys against dive- and torpedo-bombers, these balloons are necessarily smaller. But many a ship is afloat to-day because of the hazardous work done by men of the Royal Navy who man these balloon-carrying auxiliaries and the R.A.F., who handle the balloons aboard them.

D. G.



HOW THE GIRLS OF THE W.A.A.F. ARE TRAINED: A R.A.F. sergeant-instructor delivers a lecture on balloon-mooring, with the aid of a very complete model and wall plans



2. THE BALLOON IS NOW CLOSE-HAULED. It is floating a few feet above the ground; when the "pyramid" is caused to collapse, the balloon will drop and will then be secured as shown in the lower drawing. It will be noticed that the stabilisers are beginning to sag; contrary to popular belief, these are not filled with gas, but by air which rushes through the tubes within, thus blowing out the tails. When the balloon is finally secured it will be neatly confined within the inner 37-ft. circle—*Drawing by E. G. Lambert*

3. THE BALLOON IS SECURED AND FULLY BEDDED DOWN: The stabilisers and rudder, emptied of their air, have been furled close to the main body; there are two sets of guys, one row running around the upper section of the balloon and being secured to the outer ring of the oval; the other, shorter, guys being hooked on to a number of movable concrete blocks each weighing over 100 lb. Thirty or more of the latter are needed even in calm weather. The "ton patches," to which the guys are fastened on the balloon itself, will each take a strain of one ton—*Drawing by E. G. Lambert*

PADRES on "THE ROCK"

The Work of the British Army Chaplains at Gibraltar

PADRE FERGUSON-DAVIE with the Garrison Variety Company. The Rev. A. P. Ferguson-Davie went out to "Gib" after the Devon Battalion (to which he had been Senior Territorial Chaplain for some years before the war). He is Senior Curate at St. Augustine's, Kilburn; before that he was a curate in Exmouth. One of his big jobs on "The Rock," has been the organisation and running of Garrison Entertainments. The Garrison Variety Company and Dance Band give shows every night at places all over "The Rock," and entertain hundreds of men weekly

PADRE WILLIAMSON AT SPYGLASS. This picture shows the Padre about to take a Celebration of the Holy Communion at a site on "The Rock." Gibraltar is full of little communities of men in spots like this, who lead their own life, very largely dependent on themselves for any kind of social activity. The visits of the Padre for Services, and for discussions of all kinds, and the supplies of books and papers he brings round, are a really welcome feature of life for the men

THE REV. C. C. THACKER, Deputy-Assistant Chaplain-General, in conference with his Chaplains. In the background are B.S.M. Reg. Cudlipp, joint-Editor of "The Rock Magazine"; Private Edward Bloomfield, the D.A.A.G.'s clerk, as well as organist and choir-master of the King's Chapel; and Private Arthur Beer, handyman and general factotum of the Army Comforts Depot at Gibraltar

PADRE GLADSTONE distributing "The Rock Magazine." With thirteen years of Army service behind him, the Rev. W. E. Gladstone was Chaplain to the Duke of York's School at Dover, before going out to Gibraltar. He is in charge of an area round South Barracks Church; he is also a member of the Fortress Advisory Board, which hears all the cases put forward for home-posting on compassionate grounds

The Army Chaplain in Gibraltar is a busy man. Apart from his primary work of taking Services, teaching and preaching Christianity, helping soldiers of all ranks with their personal problems, visiting the sick and running their church, he also makes a valuable contribution to the social life of the men on "The Rock." One chaplain is founder and editor of *The Rock Magazine*, which sells 17,000 copies a month, and runs welfare organisations on the proceeds. Padres arrange entertainments, concerts, boxing matches, dramatics, etc. One has initiated the system of Rest Camps. Another, runs the Army Comforts Depot, and a third has founded the Garrison Literary and Debating Society

On right—**PADRE BURNLEY AT THE HOSPITAL. The Rev. W. F. E. Burnley, a Somerset man with five years' service as a curate in Bristol (at Shirehampton and Stapleton Churches), is Chaplain to three hospitals—which is a job in itself. He has also started a Society of Bellringers (bellringing is very popular in the West Country) with hand-bells sent out from Bristol. He is a keen supporter of Toc H, and runs a discussion group at South Barracks with the help of an Army Educational Corps Sergeant**

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THE GERMANS ARE REPULSED WITH AIRCRAFT AND TANK LOSSES IN A BATTLE AT BOU ARADA: This picture shows how the British troops moved up at this vital Tunisian point, over open country and under shell-fire, to approach the outskirts of the village

The enemy attacked from "Two Tree Hill" with tanks and infantry: the British troops were in a position on "Green H..." which is about 5,000 yards away. The enemy attack w...ld and beaten back. Seventeen German tanks were ...d by our 25-pounders, who greatly distinguished themselves by their accurate and heavy fire. The battle continued all day, with Messerschmitts and Junkers dive-bombing the British positions. On this occasion, one Messerschmitt and two Junkers 88 were shot down over the battle area

ONE OF THE UP-TO-DATE WEAPONS USED BY THE GERMANS IN TUNISIA: Sergeant Jack Lloyd (who comes from Wakefield, in Yorkshire) is examining a German 3·7 mortar and shells captured from a patrol which fell into our hands during the fighting in the Medjez-el-Bab area

WATER FOR THE TROOPS IN TUNISIA: A sergeant analyses the poison used by the enemy

PURIFYING WELLS POISONED BY THE ENEMY: Polluted water after treatment being pumped from the storage tanks to the water lorry. Two pictures from one of the many water-supply units operating in North Africa, who check all the reservoirs used by the British troops. The usual enemy practice here has been to poison all sources of water supply on retreating. The units treat the wells and make them fit for use again

THE FIRE-GUARDS OF BRITAIN

Two Years of Voluntary and Compulsory Effort in Fighting Incendiarism. Described by CHARLES GRAVES

IN the immediate future, the Home Secretary can be expected to issue his new Orders about fire-guard duties. These will be found to close various loopholes for men who have been evading these duties for various reasons. It was exactly three months ago that the Minister forecast the new Orders, which can be summarised as follows:

(1) A local authority will be empowered to enrol compulsorily for duty in any part of its area men who work in that area, but do no fire-prevention duty at their place of work, and live in another area to which compulsion has not been applied.

(2) Instead of fire-prevention duty being shared equally among all workers at business premises, the required number will be designated for the regular performance of forty-eight hours' duty per month at the premises and the remainder will be available for duty elsewhere in the area. There will also be safeguards against the regular employment of substitutes.

(3) A local authority will in future be empowered to maintain a running registration so as to bring in regularly all who may change their address or status.

(4) Women will not be liable for fire-guard duties at business premises until all the available men are fully employed as fire-guards. Any balance of duty then remaining will be provided for the women workers.

(5) Power to prescribe particular business premises, or parts of them, or classes of premises, as unsuitable for the compulsory performance of fire-prevention duty by women.

The proposed changes ought to simplify considerably the administration of fire prevention by the local authorities.

But who is exempt from fire-guard duties? The answer is:

(1) Any member of any of the Armed Forces of the Crown, including the W.A.A.F.s, the A.T.S., the W.R.N.S., the Home Guard and the Auxiliary Coast-guards.

(2) Any member of the Royal Observer Corps.

(3) Any constable.

(4) Any pilot holding a licence issued under the Pilotage Act, 1913.

(5) Any doctor.

(6) Any master or any member of the crew of a ship engaged in seagoing service.

(7) Any mental patient.

(8) The blind and the deaf and dumb.

All these people are exempted from registration. Those exempted from enrolment, released from duties, or liable for reduced duties, can be divided into two categories—those performing Civil Defence duties other than fire prevention, and those working in business premises and Government premises. Roughly speaking, any man who can produce a certificate to say that the place of his employment is used for vital war work, and that he is employed there upon such work for exceptionally long hours, can be exempted. So can any woman who is working exceptionally long hours at premises to which the Fire Prevention (Business Premises or Government Premises) Orders apply. People working on night shifts are naturally exempted too, as are midwives and those who are ordinarily engaged whole-time in nursing the sick.

There has been such a plethora of instructions and orders about fire prevention that even veteran fire-guards might like to be reminded of the main sequence of events since the Civil Defence Act of 1939. This placed an obligation on employers of more than thirty people to provide an adequate number trained in fire-fighting. In September 1940 the Fire Watchers' Order provided for the aforesaid employers of more than thirty people to provide in target areas fire-watchers whose duty was to watch for incendiaries and call for assistance. This was a makeshift business, and everyone can recall what a failure it was in the City of London.

MAKING OUT THE DUTY ROTA: Fire-guard-party leaders going over the hours of duty of their particular squads with their street captain, whose job it is to make out a rota each week and to supply a copy to the local Wardens' Post. During the hours of darkness, thousands of men and women, organised and trained, now stand ready to deal with incendiary-bomb attacks in their district. Hours of training, theoretical and practical, are put in each week to ensure efficient action during an Alert

The voluntary street fire-parties, which had been in existence for some time, increased after the forecast of compulsion. They used to wear an armlet labelled "S.F.P.", and were the nucleus of the future fire-guard organisation. Wardens were trained and groups of neighbours banded together in residential areas to protect each other's homes. That was the period of privately-employed fire-spotters, some of whom received several pounds a week.

Then came Mr. Morrison's broadcast of December 31, 1940. More incendiary raids by the *Luftwaffe* necessitated compulsion in a little over a fortnight from this broadcast—on January 18, 1941. The Home Secretary announced that by three new Defence Regulations he was taking power to impose compulsory part-time service in all branches of the Civil Defence Force for men and women between the ages of sixteen and sixty. The amount of compulsory service was not to exceed forty-eight hours a month. The phrase "fire-bomb fighters" was still the official one; but the Home Secretary pointed out that compulsion would not apply to the Armed Forces, the Home Guard, the Police, Civil Defence volunteers, sick persons or those to whom compulsion would be an excessive hardship.

Three months later special provisions for the City of London and the Palace of Westminster were laid down. These provisions differed from the Business Premises Order to the extent that available men had to be used for fire-bomb fighting wherever required, and not necessarily on their own premises.

By August the organisation was being pulled into shape. Fire-bomb fighters were now called fire-guards, and were given their own officers, even their own staff officers—members of the Wardens' Service with special fire duties. The appointment of these head fire-guards and senior fire-guards was responsible for tightening-up the previously loose organisation.

A month later (September 1941) came the Business Premises (No. 2) Order. This crystallised the situation between employees and occupiers, laid down a subsistence allowance and economised manpower by insisting that when men were not doing their full forty-eight hours a month fire-watching at their business premises, they were to do the balance in their residential area. This Order also made it compulsory for occupiers to provide beds, washing facilities and other amenities for the fire-guards.

In February 1942 there was a further development. Until then, fire prevention in empty residential buildings had provided a grave problem. The Residential Building Order, which was made applicable in certain areas according to the Regional Commissioners, solved it. This Order put an onus on the occupier, who had to supply a minimum of four gallons of water to be available for putting out incendiaries. The occupier also had to leave one square foot of each window unobscured, and not only give information about the entry to the police or local warden, but also had to hand over the keys.

The Government Premises Order put Government premises on the same basis as business premises and placed them under the same obligations. This was followed by the Historic Buildings Order. Ordinarily, historic buildings were supposed to be looked after by the local authority, who had to provide fire-guards from the general pool. When commercial buildings were in danger of fire, the local authorities had been inclined to forget about the historic buildings. The new Order laid down that the latter had a priority claim on the people employed in connection with it. Thus, a cathedral had first claim on its own vergers and groundsmen.

It was in August 1942 that the principle of compulsion was extended to women between the ages of twenty and forty-five. This created much excitement, and Miss Ellen Wilkinson is not likely to forget the heckling she received in various parts of the country, particularly in Liverpool. Exemptions were to be very extensive, and consequently over 3,750,000 women applied to be excused from fire-guard duties. There were two Orders: one affecting women in residential areas and the other affecting those in business areas.

Simultaneously, it was announced that all fire-guards had to be trained compulsorily. This training was, of course, modified when the new explosive incendiary made its appearance in this country. As many fire-guards seem to think that these incendiaries should be automatically left alone for seven minutes, it is desirable to repeat exactly what Miss Ellen Wilkinson said in the House of Commons on the subject:

"At the end of July the enemy brought into use new types of incendiary bomb, of which one was a phosphorous oil bomb and another a modification of the one-kilo incendiary having a more powerful explosive charge. Descriptions of these bombs, with instructions for dealing with them at once, were issued to Regional Commissioners for immediate distribution to the fire-guard, the Civil Defence Services, the police and industry. More detailed instructions, based upon an intensive study of these bombs, were issued to all concerned about ten days later by circular and through leaflets and the broadsheet *The Midnight Watch*.

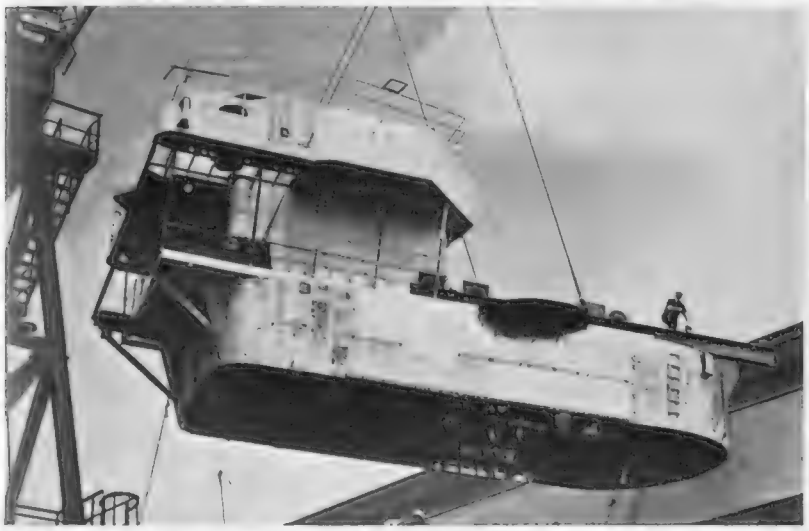
"The instructions say that if an incendiary bomb falls where it can start a fire, it must be attacked resolutely and at once, but that a bomb falling where it can do no harm should be left to burn itself out.

"The attack should be concentrated upon the fire rather than the bomb. As soon as the bomb explodes or seven minutes after it has fallen, the fire-guard should attack it at close range in the normal way. In view of the danger of approaching these bombs, sandmats should not be used. As these bombs are heavier and penetrate further than the old ones, all floors should be searched after an attack."

It will be observed that the phrase "fire-spotting" has not once been used, though it is in general use. Fire-spotters ought to describe themselves as fire-guards, just as the Home Guard call themselves by that name and not Home Spotters. And if anyone is unaware of the penalties for absenteeism, let me say that they can involve three months' imprisonment, with or without a fine of £100 if it is a police-court case. If the matter goes to a higher court, the penalties can amount to two years' imprisonment, with or without a fine of £500.

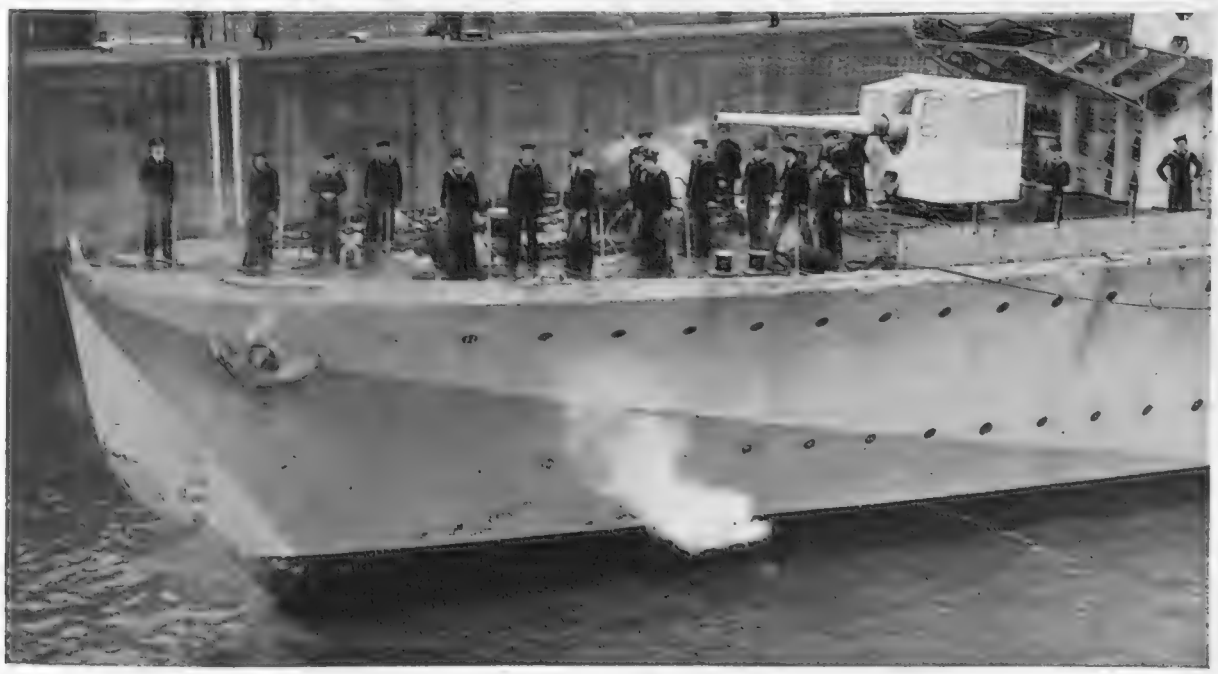
IN AN AMERICAN FACTORY : ROWS OF PATROL BOMBERS FOR THE U.S. NAVY. This picture was taken in an East Coast factory : it shows rows of partly-assembled Mariner patrol bombers awaiting the addition of wings. Each aircraft weighs 24 tons : at least twenty-five hulls can be seen in the picture, which is the first to be released by the U.S. Navy to show the Mariner assembly-line

WORK IN PROGRESS : In Shipyard and in Aircraft Factory—in America and in Great Britain



THE PRE-FABRICATED FORWARD DECKHOUSE of a U.S. destroyer swings into place on a waiting hull in the Federal Shipbuilding Yards at Kearny, New Jersey. This great structure, weighing many tons, will soon be welded fast to the deck : within a short while another unit in America's rapidly growing fleet will be taking the water

A SCENE IN A BRITISH NAVAL DOCKYARD : Workers pouring molten metal into casts. The dockyards all over the country are now working at full speed to produce more and more ships to beat the U-boats



On left—**WHAT HAPPENS WHEN A DESTROYER RAMS A U-BOAT : H.M.S. "Hesperus" entering harbour with damaged bows after having cut an enemy submarine in two.** It was while the destroyers *Hesperus* and *Vanessa* were acting as escort to an Atlantic convoy that the U-boat was sunk. It was forced to the surface by depth-charges : *Vanessa* went in first and crashed her bows down on the hull casing. Then *Hesperus* cut into the U-boat's hull abreast the conning-tower. The submarine's stern lifted high as the boat was cut in two and plunged to the bottom. The picture on the left shows how the bows of the destroyer buckled under the great impact ; but it will not be long before the damage is repaired, and *Hesperus* will again be seeking out the U-boats

The World of Books—By Vernon Fane

MEMOIRS, AUTOBIOGRAPHY and NEW NOVELS

Sir Seymour Hicks' Nineties were not Naughty; Mr. E. B. White's Autobiographical Essays; Mr. Robert Graves Reveals Milton to be a Crashing Bore; A New Novel of Prostrate France

IT would be hard to find to-day a more apt chronicler of the 'nineties, and especially of the theatre world of that time, than Sir Seymour Hicks, who makes it very clear from the start that he resents and deprecates that alliterative adjective, "naughty."

VINTAGE YEARS (Cassell. 9s.) is a blend of memoirs and what might be called *contes drolatiques*, particularly given Sir Seymour's reputation as the prince of raconteurs. Although the last time I saw him he was as vigorous and volatile as ever, he is apparently able to recall memories of forty and fifty years ago, and quite certainly able to set them down in the crispest and most lively black and white.

In company I think he talks a little more wittily than anyone I have ever known. In transcription his standard is perhaps not quite as high, but still admirable.

Sir Seymour has some good stories of Arthur Roberts, whom he quotes as a master of repartee—a sport in which the writer may be said to have taken a Blue himself.

BRITISH ART TREASURES SAFE IN CAVES 300 FT. DEEP. From time to time the pictures are brought out for inspection in the huge hall hewn out of the rock in the heart of a mountain. To economise in space, landscapes have often to be placed on end

The art treasures of the National Gallery are now housed in air-conditioned, subterranean caves in which the temperature and humidity are scientifically controlled. They are being maintained in such perfect conditions that the experts are wondering what will happen when they are brought back to London after the war. The pictures are safely stored in an underground working with between 200 and 300 ft. of rock cover, impregnable to air attack. Nothing but an earthquake could harm them: the staff, like the crew of a ship, give ceaseless attention to the machinery controlling the temperature and the miniature railway a quarter of a mile long. The pictures are in six separate "buildings" which can withstand light falls of rock

When Arthur Roberts was well over seventy he was rehearsing for a revue and seemed slightly imperfect in some of his lines. The author, "a bumptious fellow," called out, "Really, Mr. Roberts, you seem to have lost your memory."

"Indeed?" replied Roberts. "Looking at your manuscript, you don't seem to have lost yours."

There are wits of every age, and perhaps to-day's have a caustic brilliance that equals anything of those happy 'nineties. But that earlier generation had a manner of their own, and I think the following story is inimitable.

"It appears that when Lord Charles Beresford went to sea for the first time he was sent for by his Commander and told to work out the position of the ship, which had been at sea nearly a fortnight. It was a difficult problem for a little boy, but, quite undaunted, he tackled the job and returned with the utmost confidence an hour later with a detailed report. The Captain looked at it carefully and then immediately sprang to attention and saluted. 'Why are you saluting me, sir?' inquired the future officer of 'Well done, *Condor*' fame. 'I'm not saluting you, my boy; I'm saluting her Most Gracious Majesty, Queen Victoria.' 'Why, sir?' 'Well, because on your reckoning the ship is right in the middle of Windsor Castle!'"

A Reminder!

THE SALVAGE OF WASTE PAPER IS THE CONCERN OF EVERY CITIZEN IN WARTIME

ONE MAN'S MEAT, by E. B. White (Gollancz. 8s. 6d.), is described as autobiography. In reality, it is a collection of essays of fairly uniform length, originally written for, and published in, *Harper's* and *The New Yorker*. They run in chronological sequence from July 1938 to December 1941, and their only relation to autobiography is that they deal in the main with the personalia and trivia of the author's own life. This is mainly rural and is lived in what eventually turns out to be a fair-sized farm on an estuary in Maine.

"Several months ago," Mr. White begins, "finding myself in possession of 117 chairs divided about evenly between a city house and a country house, and desiring to simplify my life, I sold about half my worldly goods, evacuated the city house, gave up my employment, and came to live in New England." He then goes on to discourse upon the difficulty of getting rid of even half one's possessions, and to recall a moment of peculiar desperation over a gold mirror, which he found he could neither give away nor sell, so he "slipped the mirror guiltily in a doorway, a bastard child with not even a note asking the finder to treat it kindly. I took a last look at myself in it and thought I looked tired."

I like Mr. E. B. White's mind, which, indubitably, is an essential in the enjoyment of an essayist. He ranges between some pungent remarks on children's books, on the movies, on this war and the last, on streamlined motor-cars, to the routine of farm life. He can show how, when two men get up in the middle of a winter's night to tend a sick ewe, they can, at the same time, discuss a faulty magneto and how to deal with shaving cuts on the chin.

WHEN THE VALUABLE PICTURES ARE TAKEN from their storage caves to the studio for restoring and cleaning, they are transported in a special sealed container in order that an even temperature may be maintained, which is essential for their preservation. Here the container is moving down a tunnel a quarter of a mile long with its precious contents

One more quotation is perhaps permissible:

"In the kitchen cabinet is a bag of oranges for morning juice. Each orange is stamped 'Colour Added.' The dyeing of an orange, to make it orange, is man's most impudent gesture to date. It is really an appalling piece of effrontery, carrying the clear implication that Nature doesn't know what she is up to. I think an orange dyed orange is as repulsive as a pine cone painted green. . . . There are two moving picture theatres in the town to which my Key (a Florida Key) is attached by a bridge. In one of them coloured people are allowed on the balcony. In the other, coloured people are not allowed at all. I saw a patriotic news-reel there the other day which ended with a picture of the American flag blowing in the breeze, and the words: 'One nation indivisible, with liberty and justice for all.' Everyone clapped, but I decided I could not clap for liberty and justice (for all) while I was in a theatre from which Negroes had been barred."

WIFE TO MR. MILTON (Cassell. 10s. 6d.) is a studious and necessarily imaginative reconstruction from a very slender store of facts. John Milton's first wife, who died at the age of twenty-six, after ten years of consistently unhappy marriage, is a figure of whom little is known, but that has been, if anything, a spur to Mr. Robert Graves' invention.

To say, in the publisher's words, that Marie Powell "did not get on well with" her husband is to understate to a masterly degree. The pretty, bright, quick-tempered girl from the little Oxfordshire manor was used to giving and taking blows with the best; but what the author shows as the cold egotism of John Milton defeated her and made her both angry and miserable.

Even though Milton was, for Mr. Graves, a conceited, long-winded and tyrannical fellow, it is possible from time to time to feel some sympathy with a man whose wife showed such an utter lack of understanding of his qualities as a poet and writer. He must, by this showing, have been intolerable as a house companion, but he was still the author of *Paradise Lost*. He must, equally by this showing, have been the Civil War equivalent of a crashing bore, but his pen still wrote:

"Sabrina fair
Listen where thou art sitting
Under the glassy, cool, translucent wave,
In twisted braids of lilies knitting
The loose train of thy amber-dropping hair. . . ."

As a picture of town and country life in this period—and particularly of the latter—this novel is remarkable and infinitely more readable than most painstaking reconstructions. Mr. Graves has set himself the formidable task of writing in the first person, in the period and as a young girl. That he succeeds at all is a feat; that he has written an entertaining novel is a *tour de force*, or I am a vapouring witling worthy of a whirret.

The days of June 1940 must be unforgettable to all of us, and even in the necessary limits and self-imposed lightness of such a novel as **THE DAYS BETWEEN**, by Elizabeth Foster (Collins. 8s. 6d.), they have their own poignancy, and their overtones of panic and misery and loss. Most of all, for the refugees about whom this book was written, those days spelled insecurity.

They were an incongruous band who set out from Paris that morning in Willy Gueridon's Daimler.

Willy himself, a rich French munitions maker who had been sufficiently on the side of the martial angels to urge wider and earlier rearmament; his mistress, Marthe, a famous *couturière*; Lily Vail, the English star of the French music halls; her husband, Simon, an insufferable type of "parlour pink"; Solange Evelyn, half-French, half-English daughter of a famous M.P.; and Alex Boardman, a young American architect whose natural habitat was the Ritz bar.

Catalogued in this way they sound rather more like a list of ingredients (and well-assorted ones) than a cast of characters. The mixture as before, in fact. But Miss Elizabeth Foster, who presumably knows more than a little of Paris and the road to Bordeaux, makes an excellent job of it, and her novel, if not moving, is at least nostalgic.

She has faithfully remembered that quality of weather that seemed so ironic then—the endless and cloudless days of the finest summer we had known for many years. And she has caught some of the notes of despair and bewilderment and futility that in the first week were more present than stark tragedy.

Not a memorable book, but a likeable one and quite evidently written by one who has the right to quote: "*. . . qu'ils etaient beaux les jours de France!*"

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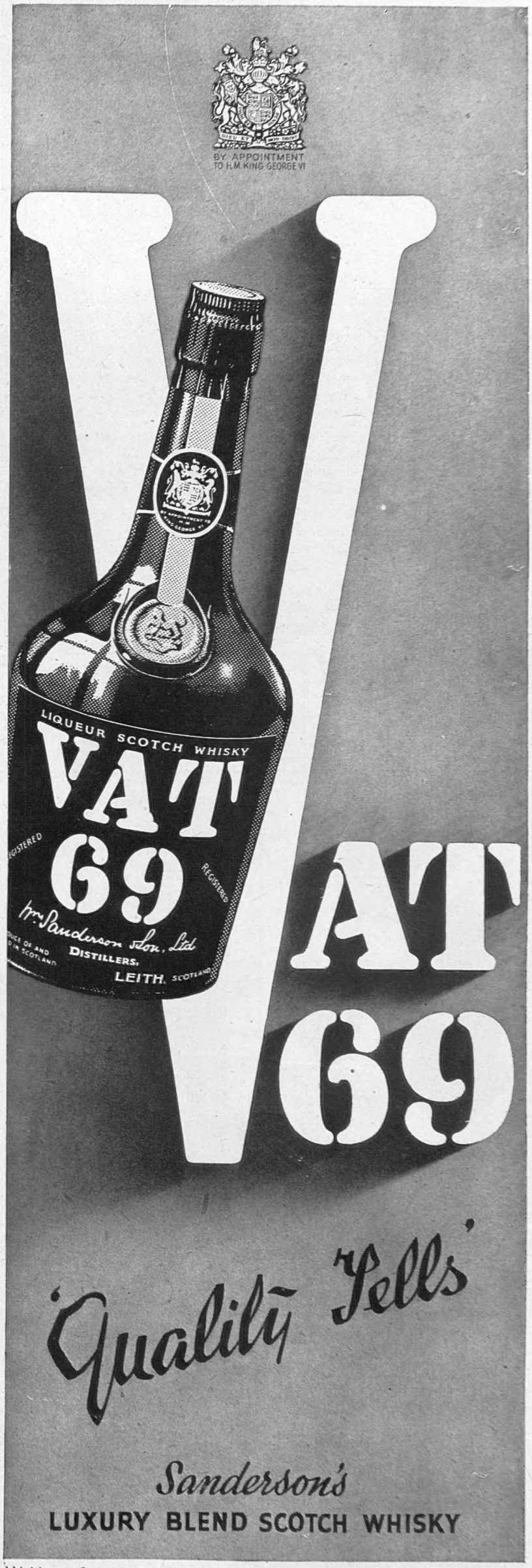

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It is one of the tragedies of this life that we accumulate so much knowledge which appears to be of little direct value to us.

The value of knowledge lies in its application, although material currency is not always its reward.

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IN QUEST OF GOOD HOTELS

ADVICE BY ASHLEY COURTENAY

Letters, accompanied by a stamped, addressed envelope for reply, should be addressed to him c/o The Editor, THE SPHERE, Commonwealth House, 1, New Oxford Street, London, W.C.1

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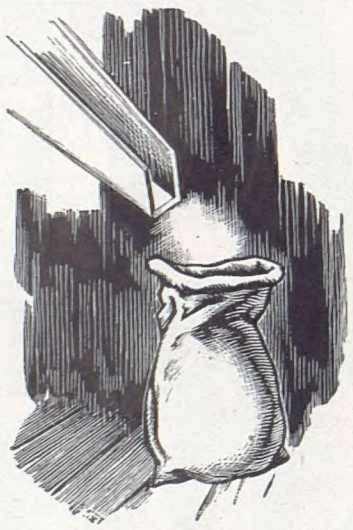

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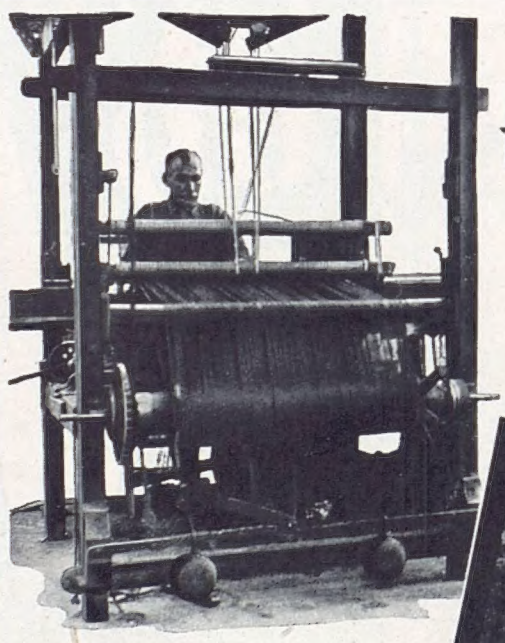

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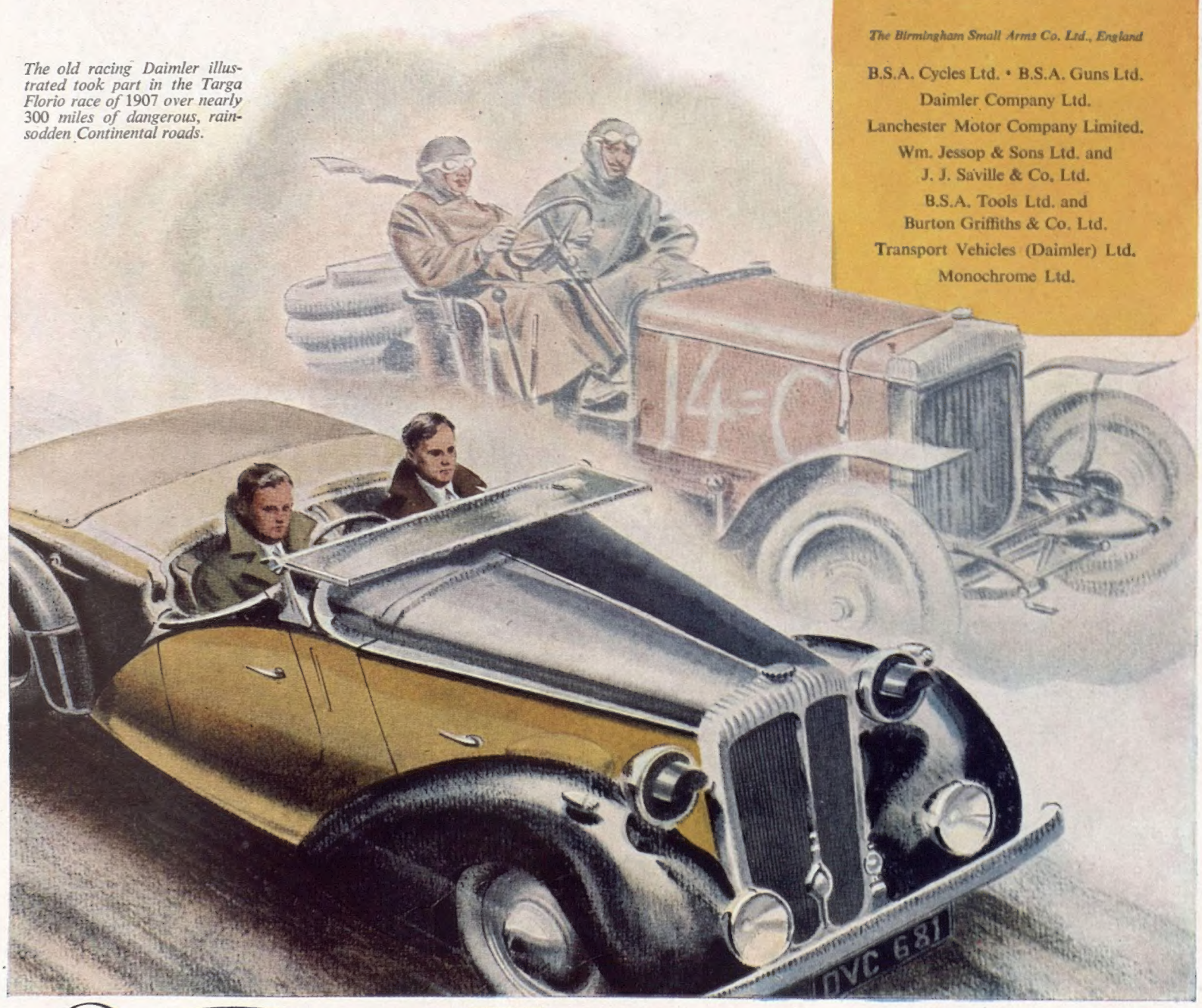

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